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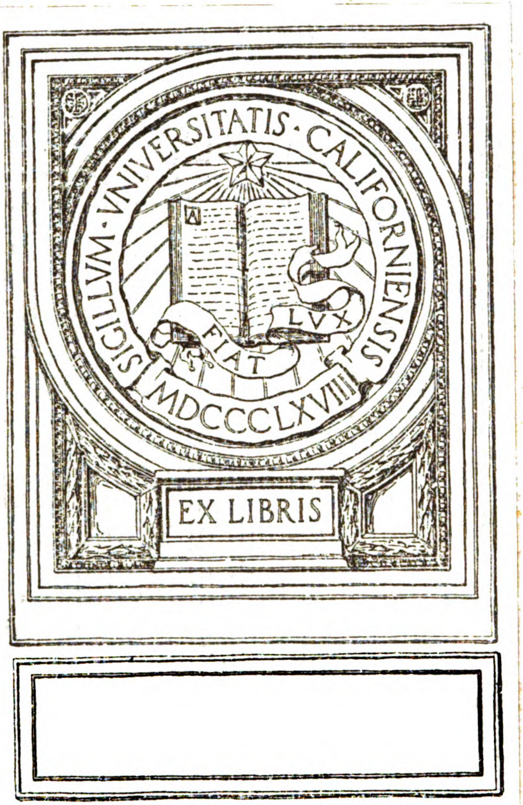
PEACE HANDBOOKS

VOL. XIV

DUTCH AND BRITISH POSSESSIONS

1920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PEACE HANDBOOKS
Issued by the Historical Section
of the Foreign Office

VOL. XIV

DUTCH AND BRITISH POSSESSIONS.

82. JAVA AND MADURA
83. SUMATRA
84. DUTCH BORNEO
85. CELEBES
86. DUTCH TIMOR AND LESSER SUNDA ISLANDS
87. DUTCH NEW GUINEA AND THE MOLUCCAS
88. BRITISH NEW GUINEA

UNIV. OF
CALIFORNIA

LONDON:
H.M. STATIONERY OFFICE.

1920.

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Editorial Note.

In the spring of 1917 the Foreign Office, in connection with the preparation which they were making for the work of the Peace Conference, established a special section whose duty it should be to provide the British Delegates to the Peace Conference with information in the most convenient form—geographical, economic, historical, social, religious and political—respecting the different countries, districts, islands, &c., with which they might have to deal. In addition, volumes were prepared on certain general subjects, mostly of an historical nature, concerning which it appeared that a special study would be useful.

The historical information was compiled by trained writers on historical subjects, who (in most cases) gave their services without any remuneration. For the geographical sections valuable assistance was given by the Intelligence Division (Naval Staff) of the Admiralty; and for the economic sections, by the War Trade Intelligence Department, which had been established by the Foreign Office. Of the maps accompanying the series, some were prepared by the above-mentioned department of the Admiralty, but the bulk of them were the work of the Geographical Section of the General Staff (Military Intelligence Division) of the War Office.

Now that the Conference has nearly completed its task, the Foreign Office, in response to numerous enquiries and requests, has decided to issue the books for public use, believing that they will be useful to students of history, politics, economics and foreign affairs, to publicists generally and to business men and travellers. It is hardly necessary to say that some of the subjects dealt with in the series have not in fact come under discussion at the Peace Conference; but, as the books treating of them contain valuable information, it has been thought advisable to include them.

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It must be understood that, although the series of volumes was prepared under the authority, and is now issued with the sanction, of the Foreign Office, that Office is not to be regarded as guaranteeing the accuracy of every statement which they contain or as identifying itself with all the opinions expressed in the several volumes; the books were not prepared in the Foreign Office itself, but are in the nature of information provided for the Foreign Office and the British Delegation.

The books are now published, with a few exceptions, substantially as they were issued for the use of the Delegates. No attempt has been made to bring them up to date, for, in the first place, such a process would have entailed a great loss of time and a prohibitive expense; and, in the second, the political and other conditions of a great part of Europe and of the Nearer and Middle East are still unsettled and in such a state of flux that any attempt to describe them would have been incorrect or misleading. The books are therefore to be taken as describing, in general, *ante-bellum* conditions, though in a few cases, where it seemed specially desirable, the account has been brought down to a later date.

G. W. PROTHERO,
General Editor and formerly
Director of the Historical Section.

January 1920.

HANDBOOKS PREPARED UNDER THE DIRECTION OF THE HISTORICAL SECTION OF THE FOREIGN OFFICE.—No. 82

JAVA

And MADURA

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1920

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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Extent

The island of Java with its small neighbour Madura, which almost touches it on the north-east, is situated between the Java Sea and the Indian Ocean, in the great southern chain of the Malay Archipelago, between Sumatra on the north-west and the Lesser Sunda Islands on the east. It lies between 5° 52′ and 8° 47′ south latitude and 105° 14′ and 114° 38′ east longitude, with a length of about 650 miles, a maximum width of 125 miles, and (including Madura) an area of 50,777 square miles.

(2) Surface, Coasts, and River System

Surface

Considered physically, Java falls into three divisions: two broad portions lying at the extremities, west of Cheribon and east of Semarang, and a narrow central waist that connects them.

In the western section the mountains are massed in the south, where the main system is comprised in the Preanger highlands, and from these, leaving out of account the volcanic cones, there is a general slope to the low-lying plain in the north. In the north-west are the isolated highlands of Pandeglang, while the extreme western peninsula is formed by the thickly wooded hills of Tjaring, both of these high regions being in the Residency of Bantam.

In the narrow middle section between Cheribon and Semarang the mountains assume a more definite chain formation, and the volcanic cones are fewer and more widely scattered. The principal range runs rather towards the northern side of the island, but curves southwards towards the east, ending in the peaks of Merbalu and Merapi. Its highest point is Slamat (11,200 ft.), and near its eastern end it is cut by the Praga valley. In the south, and separated from the main chain by the longitudinal valley of the Serayu and the Banyumas plain, is an independent ridge of limestone formation.

The mountain system of the eastern division consists of limestone and sandstone ranges with a group of volcanoes between. The northern chain comprises two parallel ridges, that near the coast being continued in Madura. Along the southern coast lies a mass of limestone highlands, broken towards the east by the valleys of Lumajang and Jember, but extending into the south-eastern peninsula of Blambangan. Between the coastal ranges are the volcanoes, forming a double row about the middle of the district and continuing in isolated peaks to the extreme east.

There are in all about 125 volcanoes in Java, of which fourteen are active. The operations of these are as a rule trifling, though, where the cones remain unbroken, serious eruptions are always possible. Volcanic rocks, mostly andesites and basalts, cover more than a quarter of the surface of the island.

The broad northern plain of western Java, from Bantam to Cheribon, is in two parts: a coastal strip, from 3 to 25 miles wide, formed by the action of seas and rivers (at the deltas of which it is widest), attaining a maximum height of some 50 ft.; and the inland plain of earlier formation, which may rise to 300 ft. or more. In Karawang and Cheribon there are marshes along the rivers and on the coast. In middle Java the northern plain becomes very narrow, while on the other hand in the south are the marshes of Tjilatjap, the extensive plain of Banyumas, and the valleys of the Serayu and Praga. The coastal strip is narrow. Lastly, in the eastern division there are in the north coastal plains extending from Semarang to Surabaya, composed for the most part of marine sand and clay, and in the south some low-lying ground, largely marsh and sand-hills. In the interior the extensive plains of Surakarta, Madiun, Kediri, and Malang lie among the volcanic peaks. They have in general a slight slope and attain in parts a height of 1,600 ft.

Coasts

On the north coast of Java the action of the rivers flowing into the shallow Java Sea has contributed to the formation of a narrow flat tract of shore, which extends with only occasional and insignificant intermission along the whole northern coast of Java. West of Cheribon it is covered with nipa and mangrove woods, while to the east there are stretches of sand and marsh. Generally along its whole length the coastal strip shelves gradually out to sea, but at the mouths of rivers the silt has formed banks of sand and mud. The coast contains many bays, but none penetrate deeply. The best harbour is Surabaya, which consists mainly of the strait between the mainland and Madura. By artificial means another important harbour has been constructed at Tanjong Priok in the Bay of Batavia.

On the south coast the ocean floor sinks to great depths close off shore. Prevailing currents sweep away the alluvial deposits, but in certain regions throw them back in the form of sand ridges. From the mouth of the Serayu to the Upak (along the coast of Banyumas, Bagelen, and Jokya) there are three ridges of sand about 50 ft. high, and varying in width from 100 yds. to 600 yds. These dunes are liable to shift, and during the south-east monsoon they tend to block the mouths of the rivers, diverting their courses to the west. Less extensive sand ridges are found in other parts of the coast, and often enclose lagoons and marshes.

East of the Upak are steep cliffs about 150 ft. high, which follow the line of the limestone hills of southern Java and for some distance present no inlet. Beyond Sempu Island, in southern Pasuruan, and again in southern Besuki, the spurs extend to the shore, where they project as headlands, and sometimes form inlets flanked by cliffs.

Sunda Strait, between Java and Sumatra, has a greatest width of 65 miles at the southern end, but the narrowest part in the north is only 15 miles across. On the Java side there are two well-marked inlets, Welkomst Bay and Peper Bay. Bali Strait, between Java and Bali, is very narrow at the northern end, but widens to the south, with one inlet, Bay of Mana, on the Java side.

River System

The rivers of Java flow generally north or south, and are as a rule short and rapid. The longer slope of the island is for the most part on the north, and it is in this direction that the main rivers flow. To this rule there are local modifications, as in the broad part of East Java, where the Solo and the Brantas are diverted to the east by limestone ridges, and in Middle Java, where the central range approaches the north coast, and where there is a group of rivers of considerable length flowing southward to the Indian Ocean.

During the north-west monsoon, roughly from October to May, the rainfall is heavy, and the rate of discharge therefore high, causing frequent floods. In the period of the south-east monsoon, from May to

Thunders almost [illegible], in (Java [illegible])

September, when rainfall is scanty, the rivers are naturally low.

In Middle Java the north coast rivers, though serviceable for agriculture, are practically useless for navigation, while the swift flow of the rivers which discharge into the Indian Ocean precludes any but the Serayu from being of use for transport. The principal rivers in East Java are the Solo, the Brantas, and the Gentung, a tributary of the Solo.

(3) Climate

Java is under the regime of the north-west and south-east monsoon; the former prevails from December to March, and the latter from April to October or November. The north-west monsoon brings the greater part of the rainfall, but during the south-east the showers are more intense.

The equatorial situation of the islands and the surrounding seas combine to produce equability of temperature. The mean annual temperature is high, being 78°–80° F. (25·5°–26·6° C.). There is a very small monthly range and a small daily range, which increases eastwards. The month with the lowest mean temperature in Batavia is January, 77·7° F. (25·39° C.), and the highest is October with 79·7° F. (26·5° C.). In Assembagus, near the north coast, and Pasuruan, on the eastern peninsula, the lowest is 77·5° F. (25·28° C.) and 78·4° F. (25·78° C.) respectively in July, while the highest is 81·1° F. (27·28° C.) in Assembagus in November and 81·9° F. (27·72° C.) in Pasuruan in October. The mean daily range is 11·8° F. (6·56° C.) at Batavia, 19·1° F. (10·61° C.) at Assembagus, and 16·9° F. (9·39° C.) at Kupang. In the mountains the daily range is much greater.

The wettest months are December, January, and

February, and the driest period is from July to September.

The wettest station in Java is Kranggan in Banyumas, with an average annual precipitation of 327 in. (830·58 cm.), and the driest is Assembagus, with an average annual rainfall of 35 in. (88·9 cm.). During the north-west monsoon the wettest region is in the south of Middle Java, with an average rainfall of 58·59 in. (148·81 cm.), and the driest in the north of East Java with an average rainfall of 44·72 in. (113·58 cm.). During the south-east monsoon the wettest region is in the southern part of West Java, with an average rainfall of 23·74 in. (60·29 cm.), and the driest is in the north of East Java, where the average rainfall is 6·3 in. (15·99 cm.). There is considerable rainfall in the transitional periods between the monsoons, when as usual it is wettest on the south coast in the west of Middle Java, and driest in East Java on the north coast of the eastern peninsula.

Land and sea breezes are important and occur at all times of the year. A fresh sea wind blows all day and is succeeded at night by a light land breeze, which, however, is hardly perceptible on land.

(4) Sanitary Conditions

Health statistics are very incomplete. Malaria in its various forms is very prevalent, especially along the low-lying marshy north coast, and occasionally there are violent outbreaks lasting for several years in various localities, from which the local form of the disease often takes its name. Lately, owing to hygienic precautions in the way of drainage and the use of quinine, an improvement has been effected. The prevalence of venereal disease is next to that of malaria.

Other endemic diseases such as cholera, beri-beri, and dysentery also occur in violent outbreaks.

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Small-pox is less common since the introduction of vaccination. Since 1911 there has been a plague epidemic spread by rats, the regions affected being in central and eastern Java.

The efforts of the Government civil medical service in Java are chiefly directed to preventing and suppressing epidemics at the ports. A few big hospitals for leprosy, eye diseases, and beri-beri are maintained at Batavia, Semarang, and Surabaya, while a number of private institutions are subsidized and otherwise encouraged by the Government.

(5) RACE AND LANGUAGE

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Native Peoples

There are three native peoples, Javanese, Sundanese and Madurese, all of whom are sprung from the same Malay stock. 159 note 1.

Javanese.—This people constitutes roughly two-thirds of the total number of natives, and inhabits the provinces of Pekalongan, Banyumas, Kedu, Semarang, Surakarta, Jokyakarta, Rembang, Madiun, Kediri, and Surabaya. The Javanese, as their script and folk-lore show, were at one time subject to Hindu influence, from which their culture is derived. Middle or Cheribon Javanese, the language of the Hindu kingdom of Majapahit, is still spoken by some 3,000,000 Javanese, and the chief language, New Javanese, is not so different from the Middle Javanese as to prevent both languages being understood by all the natives. The original Malay tongue has been influenced strongly by Sanskrit, and to a lesser degree by Arabic.

There are two varieties of New Javanese—Krama, used by the nobility, and Ngoko, used by the common people. Each class understands, and, when addressing the other, uses the other's language.

Sundanese.—The Sundanese constitute roughly one-sixth of the total population of the island. Their character is similar to that of the Javanese, but they have been less affected by Hindu culture than that race. Their language, Sundanese, is spoken throughout West Java, except in Batavia and its environs.

Madurese.—The inhabitants of the island of Madura, in number roughly over 5,000,000, are shorter than the Javanese, but their seafaring life has produced a sturdier physique and a more independent character.

Among subsidiary races are the *Tenggerese* of Wong Tengger, about 7,000 in number, who are the last remnant of the Majapahit civilization, and have been settled on the slopes of Mount Bromo since the thirteenth century. The *Baduj* numbered 2,000 in 1908, and live on the Kendung Mountains in southern Bantam. They are descendants of the Hindu recusants of the time of Hasen-u-din and live in the strictest seclusion. The *Kalangs* are a small body of people, originally nomads but now confined to villages, where they practise the trades of coppersmith and carpenter.

Alien Orientals

In every part of the Dutch East Indies there are important settlements of natives from other Eastern countries. These settlers come chiefly from China, Arabia, and, to an unimportant extent, from India.

The *Chinese* resident in Java fall into two classes: the *sinkehs*, who were born in China, and the *peranakans*, who were born in the Dutch Indies. The total Chinese population in Java, according to the 1905 census, was 295,193, of which the great majority were *peranakans*, the *sinkehs* being more numerous in the Outer Possessions. Physically the *sinkehs* are superior and are thus in demand on the plantations. Most of the immigrants are of the pauper class, and during the last half-century their numbers have doubled in Java and it has been necessary to restrict immigration. From the economic point of view the Chinese are extremely industrious, shrewd, able organizers, and physically strong.

The *Arab* immigrants come from Hadramaut in Arabia, and their chief settlements in Java are in Batavia, Cheribon, Tegal, Pekalongan, Semarang, Tuban, Grisee, Surabaya, Sumenap, Banggil, and Banyuwangi. In Java and Madura in 1905 there were 19,000 Arabs. They rarely bring their wives from Arabia, but intermarry with the natives or Arab Javanese.

Europeans

In Java and Madura, in 1905, there were nearly 65,000 persons in the class of Europeans and those legally associated with them, the latter being mainly half-castes and Japanese. The above figure excludes Europeans serving in the army and the navy. Figures of 1905 which only account for half the European population show that nearly 7,000 were civil servants, about 9,000 were engaged mainly in agriculture, industry, and commerce, and about 1,000 were in the professions, including the teachers in free schools.

Of the Europeans 92 per cent. were Dutch, but only 7 per cent. of these were born in Holland. Although the number of children by native mothers is less than formerly, the number of coloured 'Europeans' far exceeds the white, and this preponderance appears in the army, civil service, industry, and commerce.

The largest foreign class was the German, which in Java numbered about 700.

(6) POPULATION

Distribution

An estimate of the population of Java and Madura in 1912 put the total population at 36,015,435, of whom 86,681 were Europeans, 351,094 alien Orientals, 35,577,660 natives. While the Kedu Residency is one of the most densely inhabited regions in the world, the sparse population of the two peninsulas at the extremities of the island makes the average density a little less than that of England and Wales.

Generally speaking, the bulk of the population inhabits the flat country, except in marshy regions, but the cultivation of coffee, cinchona, and tea has attracted population to regions at a considerable elevation, e. g. the Preanger plateau and the mountains of Middle Java.

The population of the north coast is thicker and more generally distributed, and in this region are the chief towns. Here it is mixed in character, comprising numbers of Malays, Chinese, Arabs, and Europeans. On the less accessible south coast the natives have preserved their characteristics to a greater degree.

About 3 per cent. of the population inhabit the towns.

Towns

The capital of Java and of the Dutch Indies is Batavia, on the Bay of Batavia on the north coast, with a total population in 1905 of about 138,800, of whom 8,777 were Europeans, nearly 100,000 natives, over 28,000 Chinese, and over 2,000 Arabs. By 1915 the European population was supposed to have more than doubled.

Surabaya, on the mainland opposite Madura, has the largest population, which in 1915 amounted to

156,752, of whom over 15,000 were Europeans, over 120,000 natives, 19,000 Chinese, and the rest Arabs.

Semarang is the third seaport of importance on the north coast, and had in 1905 a total population of 96,660.

Surakarta and Jokyakarta, situated in the centre of the island, are the capitals of the two native principalities bearing the same names. Surakarta in 1905 had a total population of 118,378 and Jokyakarta 79,567, in each case mainly composed of natives, with a considerable colony of Chinese.

Movement

Comparing the census of 1905 with the estimate of the population of 1912, the Europeans and those legally associated with them have increased by about 33⅓ per cent., the Orientals, including Chinese, Arabs, and others, by a little over 9 per cent., and the natives by about 20 per cent.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

1598. First Dutch trade relations opened.
1602. Establishment of Netherlands East India Company.
1617. Coen appointed Governor-General.
1619. English assist natives to resist Dutch.
1619. Batavia established as seat of government.
1623. De Carpentier appointed Governor.
1623. Legal murder of English at Amboina.
1627. Coen reappointed Governor.
1628. Siege of Batavia by Sultan of Mataram.
1636. Van Diemen appointed Governor.
1667. Ruthless military rule of Cornelis Speelman.
1750. Chinese peril in Batavia.
1755. Empire of Mataram broken up.
1755. Principalities of Surakarta and Jokyakarta established.
1791. Insolvency of Dutch East India Company proclaimed.
1798. Charters of Dutch East India Company annulled.
1806. Daendels appointed Governor for French kingdom of Holland.
1811. Capture of Java by British. Raffles appointed Lieutenant-Governor.
1814. Treaty restoring East Indian possessions to Holland.
1816. Government handed over by British.
1819. Van der Capellen appointed Governor.
1824. Treaty between England and Holland respecting territory and commerce in East Indies.
1824. English possessions in Sumatra given up.
1824. Establishment of Netherlands Trading Company.
1825. Outbreak of five years' war in Java.
1830. Van den Bosch appointed Governor. Introduces new system of exploitation.
1840. East Indian budget first submitted to States-General.
1850. ' Van den Bosch ' system improved and restricted.
1860. Appearance of *Max Havelaar*, denouncing 'Forced Culture' system.
1887. Protests touching unsatisfactory conditions of Dutch East Indies.

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1903. Local autonomy conceded.
1905. Netherlands loan of 40 million guilders to cover East Indies debt.
1908. Elective principle introduced into local government.
1913. State Commission reports on defence of East Indies.
1915. East Indies raise first loan on their own account (62½ million florins).

(1) EARLIEST EUROPEAN SETTLEMENTS

THE first European Power to establish its influence in the East Indian Archipelago was Portugal, soon after Vasco da Gama had led the way to India round the Cape of Good Hope in 1497. The Portuguese conquest of Malacca in 1511 was followed almost immediately by the appearance of Portuguese merchantmen in the Moluccas in quest of spices; here they obtained permission to build a fort on the island of Ternate, and subsequently Amboina became their principal station.

Already in 1521 they had begun to visit the coasts of Sumatra and Java; in the former island the most powerful state they found was that of Atjeh (Achin), which was ruled by a Sultan, and professed the faith of Islam, introduced in early times from Farther India. Java they found in a condition of unrest caused by religious strife; and this led, about the middle of the sixteenth century, to the establishment in the centre of the island of a powerful empire named Mataram, which maintained itself entire for two hundred years, but was finally broken up by the Dutch in 1755 and divided into the two principalities of Surakarta and Jokyakarta. There is abundant evidence of extensive commercial intercourse between the Portuguese and Javanese throughout the sixteenth century, the former enjoying all the privileges of free trade in the harbours of Java, the latter in return being admitted as colonists in Malacca, Ternate, and Amboina.

Until Portugal was conquered by Spain in 1580, the

Dutch had obtained at second-hand from the Portuguese all Oriental products needed for their own consumption and for that of the countries they supplied. A comparatively small matter led to an alteration of this arrangement. The closing of the ports of Cadiz and Lisbon by Philip II to the vessels of his rebellious Dutch subjects would not necessarily have led to the acquisition of a great colonial empire by the Netherlands; but it came precisely at a moment when many other potent reasons led the Dutch to undertake great ventures oversea. Trade with Muscovy, the Levant, Guiana, and even far Brazil had whetted the appetite of the Dutch for greater profits; what, therefore, they could no longer get at second-hand in Spain and Portugal the merchants of Holland determined to obtain at first-hand in the Indies.

The first successful Dutch expedition to the east, consisting of eight vessels, was sent out in 1598 by an Amsterdam company. It was more fortunate than an earlier one under Cornelis de Houtman; and, although very great antagonism on the part of the Portuguese had to be overcome before Dutch influence and commerce were firmly established throughout the archipelago, friendly trade relations were at once established with the rulers of Bantam, Jacatra, and Toeban, on the island of Java, and those of Amboina, Ternate, and the Banda Islands in the Moluccas.

(2) THE NETHERLANDS EAST INDIA COMPANY

Between 1595 and 1602 fifteen expeditions, numbering altogether 65 vessels, proceeded from the Netherlands to the East Indies, at great cost of life and treasure. The traffic, comparatively small as it still was, suffered largely from being in the hands of too many small companies, each anxious to destroy the others. This was remedied in 1602 by the establishment of the Netherlands East India Company, which began by sending a fleet of 12 ships to take over the Dutch factories already existent at Bantam and Grisee, and traded with such profit that a dividend of 15 per cent. was paid in 1605, and one of 75 per cent. in 1606. The average annual dividend over a period of 150 years was 21 per cent.; and the shares were usually quoted at six times their nominal value.

The English, desirous of sharing in such profitable dealings, soon obtained a footing in Bantam, Jacatra, and Japara, and even in Macassar and the Moluccas. The Dutch found themselves seriously thwarted by the natives in their trade in all these places, and alleged that this was due to the instigation of their English rivals. They, therefore, placed at the head of affairs a man filled with a fierce spirit of animosity against the English, who proved no less efficient as a soldier than as an administrator.

In 1617 Jan Pieterszoon Coen was promoted from the post of Director-General of Commerce, which he had held since 1614, to that of Governor-General. His first success in May 1619 was the defeat of a powerful alliance of natives and English in Bantam; he razed the town of Jacatra to the ground, and built upon its ruins Batavia, the new seat of government. The real founder of Dutch empire in the east, his fame is stained by the bloody means he employed to enlarge the Company's gains. In an expedition which he led to the Banda Islands in 1621, to obtain possession of the vast nutmeg and clove plantations, he exterminated the natives and devastated their homes; 2,500 were killed, 1,322 carried off as prisoners. The plantations were then farmed out to time-expired soldiers and officials, who with slave labour raised crops that had to be sold to the Company at fixed prices. Another practice of Coen's was systematically to destroy whole districts of spice-yielding trees in order to enhance the value of the crops already gathered.

Coen was succeeded in 1623 by De Carpentier, who proved himself equally energetic in resisting English enterprise in the East. In 1619 the English East India Company had acquired the right to have representatives at Batavia and at places in the Moluccas which were under Dutch rule. In 1623 the English were accused of conspiring to attack the Dutch fort at Amboina ; nine of them, alleged to have confessed their guilt under torture, were executed. The British Government contended that the story of the conspiracy was a fabrication, and demanded compensation and the impeachment of the judges. Both being refused, the English began to leave the Dutch settlement.

De Carpentier's governorship was followed by the reappointment—most opportune for the Dutch—of Coen in 1627. In 1628 the Sultan of Mataram, who had gradually got possession of central and eastern Java, and was anxious to extend his power over the whole island, sent a large force to lay siege to Batavia. Coen died during the siege in September 1629 ; but the Javanese were utterly defeated by the Dutch, whose footing was henceforth firmly established. The next Governor who could in any way compare with Coen was Van Diemen (1636–45), under whom not only were the great discoveries made which his name recalls, but the dividends of the Company were greatly increased—a matter of far more importance to the Directors at home.

The history of Dutch conquest in the East during the middle of the seventeenth century consists of a number of apparently small but cumulatively useful diplomatic victories over native rulers, and of feats of arms, sometimes glorious, such as the capture of Ceylon from the Portuguese in 1656, sometimes wantonly cruel, such as the marooning and starvation of 5,500 unarmed natives on a desert island between Boeton and Moena in 1667 during a successful expedition by Cornelis Speelman against Macassar.

For more than a century after this the Company, through the continued vigour of its agents, constantly extended the sphere not only of Dutch trade but also of Dutch sovereignty. Instead of remaining a purely trading body, it gradually became a governing authority, exercising the rights of former rulers, exacting dues, and being directly represented where it did not rule in name. The attention of its officials could no longer be given exclusively to trade; and its commercial policy, which should have been its chief preoccupation, became weak and unwise.

It encouraged no cultivation that would have meant small dividends to start with; its efforts were always directed to selling at high prices and to limiting production in order to keep up those prices. Its monopolies oppressed free native trade and shipping to such an extent that the Javanese lost all spirit of enterprise and their former high place among the seafaring peoples of the east. Though it held sway for two centuries, the Company never used its power to protect the people against the abuses committed by their own rulers, or 'Regents', as the native princes were called; its primary aim was profit, not dominion. Supervision was exercised only in order to guarantee the Company's commercial interests—the maintenance of monopolies and the regularity of the deliveries agreed upon.

Although they lived in ostentatious luxury, the 'Regents' were mostly impecunious, and frequently leased whole districts to Chinese, of whom 10,000 were living in the vicinity of the town of Batavia in the middle of the eighteenth century. These Chinese constituted a great danger to Europeans, and practised all kinds of extortion upon the natives. Of the moneys received by the 'Regents' from the Company for the produce of the land the actual toilers obtained but a meagre percentage, and when in great straits were often forced to contract loans which made them the actual slaves of the ruler; for their inability to repay reduced them literally to servitude. A system that so impoverished the Javanese could not continue indefinitely to enrich the Company. Hence its decay.

When, in 1791, the insolvency of the Company was made known to the shareholders at home, a commission was sent out to investigate and to institute reforms; but, before it could act, the Batavian Republic had been established, in 1795; and in 1798 that Republic took over all the Company's possessions and annulled its charters.

(3) The East Indies under Daendels, 1808–11

In 1806 the Batavian Republic became the kingdom of Holland; and a newly-formed Ministry of the Colonies appointed General Daendels to the governorship of all Dutch possessions east of the Cape of Good Hope. Daendels, who was a most active and energetic administrator, reached Java in 1808 and found the situation critical.

Great Britain threatened the Dutch everywhere by sea; and the Javanese princes, acquiring audacity in proportion as they saw proofs of Dutch weakness, thought the moment ripe for prescribing the law to their former superiors. Dutch dominion in Java was in the greatest danger. The internal financial resources were exhausted, while the British blockade caused total stagnation of trade. Confronted by such alarming conditions, Daendels thought it necessary to place himself above every law but that which enjoined the preservation of the colony entrusted to his management. He was just beginning to introduce many reforms afterwards adopted by his great English successor, when he was recalled to Europe in May 1811, a year after the kingdom of Holland had been incorporated in the French Empire.

The new Governor, General Janssens, had hardly taken his place when Lord Minto, acting on the advice of Thomas Stamford Raffles, a young British official who possessed an intimate knowledge of the East Indies and had already intrigued with various native rulers to counteract Dutch influence, determined to snatch Java from the French, and on August 4, 1811, landed an army unopposed near Batavia. Janssens' disregard of the measures taken by Daendels and official neglect and treachery were the chief causes that led to the surrender of Java and its dependencies to the British; the Dutch officials were, however, by stipulation allowed to keep their posts and to form part of the British administration.

The loss of Java did no immediate or direct harm to the Dutch. For many years prior to the British occupation Holland had derived little or no advantage from the nominal sovereignty which she continued to exercise over its internal affairs. Trade and intercourse between Java and Europe had been interrupted and nearly destroyed; and the colony now added nothing to the wealth of the mother country. Holland had continued, it is true, to send out governors, counsellors, and commissioners; but she gained from their inquiries little information as to the causes of her failure, and from their exertions no aid in improving her resources. The so-called colony had become a burden to the mother country.

(4) THE EAST INDIES UNDER BRITISH RULE, 1811–16

Sir Stamford Raffles, who was Lieutenant-Governor of the East Indian Archipelago for five years (1811–16), succeeded in carrying out many of the reforms that Daendels had considered necessary but had been unable to impose. With the advent of this enlightened British ruler Java entered upon a new era of its history.

One of Raffles's first acts was to divide up the Dutch East Indies into four governments—Java and its dependencies, the Moluccas, the west coast of Sumatra, and Malacca. In the three last-mentioned divisions matters were left as they were found; but in Java tentative changes were introduced that subsequently became permanent measures.

To lighten the burdens that lay upon the native population Raffles abolished most of the feudal services and the forced labour that had been kept up by the old Dutch East India Company, retaining, however, the tithe system. These tithes had been imposed from time immemorial upon the produce of the land, and were payable in kind; they were now regulated according to the cost of production. Raffles was nevertheless compelled to connive at certain exceptions for which there was no real justification, such as the employment of impressed labour for road-making, and obligatory deliveries from the Preanger coffee-plantations.

Raffles decided to reintroduce into the administration the officials who had held office under the Company and who had been temporarily set aside during the Napoleonic period—the Residents and their assistants. The Residents were the heads of the civil and financial administration, of the law, and of the police. The natives, however, never came into immediate contact with these Europeans who ruled the destinies of their country; all orders came through their own princes—

the 'Regents'. Though the authority and influence of the latter, upon whose personal attributes the immediate welfare of the natives depended, became even more limited than hitherto, Raffles, in order to enhance their apparent importance, gave them larger incomes and more extensive personal estates.

Slavery was almost exclusively limited, among European slave-owners, to domestic service in the houses of the rich, and was combated by the new Governor to the full extent of his power by a tax on slaves. He also endeavoured to diminish the use of opium by a heavy duty on its import; but the opposition of the Calcutta merchants frustrated this measure.

Greater success attended Raffles's attempt to release the Javanese from the oppressive yoke of the salt monopoly. All such districts as were favourably situated for the production of salt had been farmed out by the Dutch to the Chinese, who were given unlimited authority over the inhabitants of the districts they held on lease, with power not only to enforce labour in the salt-pans but to impose taxes upon the produce of the adjacent rice-fields. Raffles rescued the natives from the extortions of the Chinese by placing the salt industry entirely in the hands of the Government; and this beneficent change of policy was not afterwards revoked by the Dutch.

Enough has been said to prove that sweeping reforms were not only planned but largely carried out during the very brief period of occupation by the British. Soon after Napoleon's overthrow Raffles was informed that the East Indies were to be restored to Holland, and this news paralysed his efforts and his zeal. He had no guarantee that the Dutch Government would continue to carry out the reforms he had instituted; and the period of his rule ended in chaos. Before the restoration of the islands to Holland Raffles was succeeded for a few months by John Fendall, who handed over the administration to three Dutch Commissioners on August 19, 1816.

(5) RESTORATION OF DUTCH RULE, 1816

The difficult task of these Commissioners was to determine which system was henceforth to be adopted —that of the old Company or that introduced by Raffles. In other words, should there be monopoly and compulsion, or free trade and free labour? Finding that the English spirit of reform had been enthusiastically welcomed both by the native population and by their rulers, and therefore made for contentment and prosperity, whilst the old respect for Dutch authority had even in the comparatively short interregnum dwindled to a shadow, they decided to adopt in its entirety the policy of the great English administrator.

Foremost among the ideals of the Commissioners was that of emancipating the natives and protecting them from the rapacity of their own rulers. The latter were, therefore, in the first place dispossessed of their official, as distinguished from their private, estates; secondly, they were forbidden to conclude contracts with the *dessas*, or villages—a custom which had led to much oppression; thirdly, they were prohibited from carrying on trade, and so misusing their power by the employment of forced labour.

But time wrought changes in these good resolutions and measures, which may fairly be regarded as the legacy left by Raffles and five years of British rule. Van der Capellen, one of the three Dutch Commissioners, was in 1819 made Governor; and, from the moment that he took office, a new spirit seems to have possessed him. It had been the aim of Elout, one of his former coadjutors, to encourage free labour and to invite the introduction of foreign capital into Java; for he contended that the industry of the natives, if left to itself, would have attained no results at all in keeping with the favourable prospects of the island. All obstacles that stood in the way of private enterprise had been as far as possible removed; and in 1818 it was expressly resolved that untilled lands were to be leased to Europeans, so that they in their turn might enter into agreements with the inhabitants to cultivate them. Van der Capellen, on the other hand, left nothing undone, when he became Governor, to thwart and oppress private enterprise; and much of the good that he had suffered to be done whilst acting with his two former colleagues he now deliberately annulled.

Always inimical to Holland's power, Raffles now, as Governor of the British possessions on the west coast of Sumatra, did all he could to counteract it throughout the archipelago. Dutch statesmen, foiled by the *coup-de-main* by which Great Britain won Singapore in 1819, and chagrined by the rapidity with which British enterprise had in a relatively brief period brought that port to a state of prosperity hitherto unknown in its history, made haste to conclude a treaty in 1824 by which a conflict with Great Britain might be avoided.

By this treaty it was stipulated that neither British nor Dutch agents should form any new settlement on any of the islands in the eastern seas without previous authority from their respective Governments in Europe. Holland ceded to Great Britain all her establishments in continental India; the factory of Fort Marlborough (Benkulen) and all other English possessions in Sumatra were ceded to the Netherlands; and the town and fort of Malacca and its dependencies went to Great Britain. A further stipulation was made that no Dutch were ever to form any establishment on the Malay Peninsula or to conclude any treaty with any native prince or state thereon; the same condition was imposed on the English with regard to Sumatra. England withdrew her objection to the occupation of the island of Billiton and its dependencies by the Dutch, and the Netherlands acted reciprocally with regard to the occupation of Singapore by the English.

(6) THE NETHERLANDS TRADING COMPANY

Twelve days after the treaty of 1824 was signed, the Netherlands Trading Company was established to promote trade and commerce with the Dutch East Indies by vessels flying the flag of any state friendly to Holland; but this company, unlike the Dutch East India Company established in 1602, was to have no share in the administration of any colony.

Conditions had indeed entirely changed. In 1602 the States-General had granted the East India Company a charter in order to stop the over-keen competition of numerous small companies. The spirit of enterprise then reigning throughout the nation had to be bridled. In 1824, on the other hand, the King had to reinstil into his subjects the desire for great undertakings and to resuscitate the old national love for maritime adventure. The hopes that commerce generally would revive upon the conclusion of peace had failed to materialize, and the failure was attributed largely to the far from flourishing condition of East Indian trade.

The example set by the sovereign in subscribing four million guilders (£333,333) to the new company was eagerly followed by his subjects; and the undertaking, which was to be so intimately connected with the history of Dutch East Indian possessions, was started with a capital of over £3,000,000. Its charter was for a quarter of a century, and was renewed in 1849, in 1874, and in 1900 for a similar period, that now current being due to expire on December 31, 1924.

The capital of the company has to-day grown to £5,000,000, and the dividends paid for the ten years ending 1913 averaged 9·65 per cent. per annum; that of 1914 was 8 per cent.

(7) UNREST AND THE JAVA WAR, 1825–30

Van der Capellen in his long administration (1819–35) was faced with many grave problems. The iron rule of Daendels had instilled fear, but little confidence, in the native rulers. Under his successor, Janssens, the Dutch flag had made way for the British. The thoroughness of Raffles's reforms was recognized; and, when Dutch administration was restored in 1816 and England retired, suspicion began to circulate among the populace that 'the Company' (as the Netherlands Government was universally called by the natives) was much less powerful than had been thought. The Mohammedanism of the people of Java—more than 90 per cent. of whom adhere to that religion—strengthened their political aspiration to throw off the yoke of the unbelieving European; and before long a spirit of opposition, defiance, and revolt was abroad.

In the districts around Krawang and Cheribon, and in the Moluccas, Celebes, Riouw, and Palembang, there were risings necessitating the despatch of military expeditions. The most important of these small wars was that which raged from 1825 to 1830 in Java. Its chief causes were (1) the decision of the Government to cease leasing untilled lands to Europeans, that they might give employment to natives, and (2) the extortion practised on the natives by the Chinese, now principally in the new rôle of farmers of toll-gate dues. The right of the native rulers to exact these toll-gate dues had in 1812 been taken over by the British in return for adequate compensation, and was naturally transferred in 1816 to the Dutch authorities, who immediately leased it annually to the Chinese, to the great disgust of the native population. Matters came to a head through a slight put upon Dipa Negara, uncle and guardian of the young Sultan of Jokyakarta, by a tactless Resident. It took five years to quell this unfortunate rising, during which whole districts were depopulated. It cost Holland alone 12,000 men and a sum of 32 million guilders (£2,666,666); the total loss of life has been estimated at 250,000. Dipa Negara was actually taken whilst holding parley with the Governor-General under what he claimed to be a safe-conduct; how far the Government's action was justifiable has been keenly debated but never made quite clear. Dipa Negara was ultimately banished to Macassar, where he died in 1855.

Profiting by the fact that none of the 'Regents' nominated by the Government had taken the part of Dipa Negara, the Dutch authorities decided to mark their victory by further limitation of the powers of the native rulers, and in pursuance of that policy assumed the direct administration of several more provinces. It is, however, significant that the toll-gate dues, which had given rise to such great oppression of the native, were entirely abrogated.

(8) Van den Bosch and his Policy

The Java war came to an end in 1830, at a critical moment in the history of the Netherlands. Money was urgently required to meet expenditure due to the Belgian rising; and the King, setting aside the advice of Elout, and of Du Bus de Ghisignies (who had been Commissioner-General during the latter part of the Java war), adopted the colonial policy propounded by Count Van den Bosch, who had but lately returned from the West Indies, and appointed him Governor-General of the Eastern possessions.

The appointment of Van den Bosch once more wrought a great change in Dutch colonial administration. It had always been a custom for the natives to pay taxes in kind, produce being accepted at a fixed price. The old East India Company, aiming at continuity of the native form of government, had always, when extending its domination, left such internal civil institutions untouched, and the sway of the native rulers, with all rights of succession, unquestioned. The 'Regents' were responsible for due delivery of the produce of the tax in kind; and it was for them to determine in what proportion their subjects were to bear the imposts.

Immediately on his arrival in Java, Van den Bosch introduced a new system of cultivation and taxation, the chief aim of which was to obtain speedily considerable profit for the Netherlands. Hitherto the natives had been obliged to give up on an average two-fifths of their harvests as a rent-charge or land-tax. Van den Bosch decided to remit this charge upon the harvest if the farmer would plant one-fifth of his soil with products destined for the European market. Should the value of the crop exceed that of two-fifths of the old harvest, the surplus was to be returned to the grower.

Very soon after the introduction of the new system it was possible to send large sums to the Netherlands; and the wisdom of Van den Bosch was highly commended. But these brilliant results were paid for by the exploitation of the native and in many districts by the exhaustion of the soil. Few colonial policies have occasioned so much misery. Coffee is a plant that yields only after six years of cultivation; so it was somewhat neglected for a long time owing to the demands for immediate profits; and indigo, sugar, and tea took its place. Tea, proving a comparative failure for profit-making purposes, was soon discarded; indigo was retained, with great injury to the whole of Java; for its cultivation exhausted the soil to such an extent that fresh land had constantly to be sought out, to the detriment of the rice crops. With an ever-increasing population there was therefore a corresponding decrease in the supply of rice, the staple article of food; and the results of this were lamentable. Not only was a great deal more than the stipulated fifth of the land frequently planted with produce for the European markets, but the land-taxes were raised and feudal services imposed to a scandalous extent. In this way the natives of fertile Java were impoverished and forced, in many cases, into revolt. It was not, perhaps, that the system itself was bad, for it certainly stimulated industry and intelligence among the natives, but it lent itself too readily to abuse, and undoubtedly was grossly abused.

The history of the Van den Bosch system of cultivation may be divided into two periods, the first of which ends in 1850 and includes the process of its extension and of its more intensive application. During that time Dutch colonial policy was dictated solely by the mother country's need of money. But in the middle of the century the influence of the revolutionary wave that swept Europe in 1848 was clearly felt in the East, and the system was gradually improved and limited.

It is curious that the compulsory cultivation of coffee and its delivery to the State continue to-day, though coffee did not, upon the introduction of 'the system', commend itself to the Government as paying produce. From 1850 to 1870 the annual yield of Java coffee averaged about 50,000 tons. In 1880 it was over 60,000 tons. For many years the profit accruing to the Netherlands Treasury from the sale of Java coffee amounted to £3,000,000 annually; and, in spite of the fact that, from a variety of causes, the yield has become much smaller, higher prices still make it a considerable source of revenue.

(9) 'MAX HAVELAAR'

The mistaken policy of the Netherlands Government in sanctioning, and in concealing from the Dutch nation, the oppression practised in the East Indies for the sake of gain was forcibly brought home in 1860. At that time colonial circles in the Netherlands were divided into two parties. The one was formed of friends of the State culture system in Java, who extolled the commercial welfare it produced. In the other were the friends of free labour, who contended that Java would only attain full prosperity if all forced service and cultivation were abolished and the natives were given an opportunity of selling their services in the open market to private enterprises financed from Europe.

Into these opposing camps a novel entitled *Max Havelaar* fell like a bombshell. It was written, under the nom-de-plume of 'Multatuli', by Eduard Douwes Dekker, who had from 1839 to 1856 held various posts in the Dutch East Indian civil service. He had been so much impressed by the inhumanity of the system he had been called upon to administer that, although without any private means, he had resigned his appointment of assistant Resident and given up all his prospects in order to return to Holland and place his views before the Dutch public.

Though *Max Havelaar* was presented in the form of fiction, its incidents were founded on facts, and it formed a severe indictment of the policy pursued for two and a half centuries by the Dutch in the management of their East Indian possessions. It proved, to the satisfaction at any rate of a large section of the Dutch nation, that the Home Government, whilst ordering humanitarian rule on paper, in reality connived at slavery. Theoretically the Javanese peasant was a free man; in practice he was a chattel. The Dutch had found ready to hand in the East what they did not find in the West Indies, in America, or in the Cape of Good Hope—a huge labouring population, or rather, a huge population that could be forced to labour. This being so, there was no necessity for them to found real colonies; and the Dutch East Indies, according to Dekker, were not colonies in the true sense of the word, but mere money-making concerns.

All this 'Multatuli' told his countrymen, stating that the reports of the Government officials transmitted to the mother country were for the greater and more important part untrue. He gave artistic form to a recital of extortion and oppression which he nevertheless offered to substantiate with legal proofs. He even reproduced the despatches he had written to his last chief, the Resident of Bantam, concerning the particularly flagrant act of maladministration that had roused him to fighting pitch, and, finally, a letter which, after his resignation had been accepted, he had sent to the Governor-General of the Dutch East Indies. In this he accused that high official of having sanctioned the system of abuse of power, of plunder, and of murder that oppressed the Javanese. A well-informed reader will probably feel, however, that much of his indictment might have been applied at that date to any other tropical territory governed by Europeans.

Max Havelaar was never refuted; as its author asserted, 'refutation of its main features was impossible'. Its accusations were hushed up; but Holland was too democratically governed to make suppression of the book possible. 'It sent a thrill throughout the country,' as was admitted in the Netherlands Parliament. The system it condemned was too strongly rooted to be overthrown by 'a thrill'; but abuses have been gradually diminished, and the system itself has now been almost entirely abandoned.

In March 1887 an address, signed by 100 men experienced in East Indian affairs, was presented to the King submitting, *inter alia*, the following considerations: (1) the very unsatisfactory condition of affairs in the East Indies; (2) the dissatisfaction of the populace, caused by industrial depression and intensified by the financial measures of the administration; (3) the suppression by unusual measures of public signs of this dissatisfaction; (4) the greater necessity, in these circumstances, for reliance on the army and navy; (5) the parlous condition of both these services in the East Indies; (6) the loss of Dutch prestige and the danger of foreign interference, seeing that Holland had nominally extended its dominion over a very wide zone important for trade, but was quite unable in reality to protect persons and property within that zone; and (7) the necessity of immediately reinforcing Dutch arms in the East to such an extent as to put a speedy end to all risings, and to restore peace and confidence. Like *Max Havelaar*, this address had no immediate results, though both had far-reaching effects upon the policy followed by subsequent Governments.

The 'Culture System' in Java was defended by two Englishmen in books published in 1861 and 1869 respectively. *Java, or how to manage a Colony* (London, 1861, 2 vols.) was written by J. W. B. Money, 'a clever Calcutta barrister', as the result of 'a trip in the summer of 1858'; and the numerous contrasts the author draws between Dutch and British colonial administration all serve to bolster up his indictment of British rule in India. The author's chief test of the prosperity of a colony is the amount obtained from it; for first among the chief results of General Van den Bosch's policy he places the raising of the revenue in 25 years from two millions to nine and a half millions sterling—though taxation increased from 6s. 8*d.* to 16*s.* 6*d.* per head of the population. The book cannot be considered a refutation of *Max Havelaar*.

Nor can the strictures passed on *Max Havelaar* in 1869 by Alfred Russel Wallace, the well-known naturalist, in his book *The Malay Archipelago,* be taken very seriously. This writer was three months and a half in Java, and during that time was principally occupied in making researches into its natural history. It is admitted in the works of both Money and Wallace that they were greatly indebted for their information, and for assistance generally, to the Dutch.

Free labour is now almost universal, except that the State still has power in some Residencies to enforce statute labour for the construction and maintenance of roads and other purposes; but in no district of the Dutch East Indies may the number of days' labour required exceed 52 per annum, this being the maximum for Tapanuli and Palembang in Sumatra. In most parts of the Outer Possessions the maximum is much lower; in Billiton it is only 24, and in south and east Borneo 26. Statute labour is gradually being abolished entirely; and in Java and Madura—as a result of regulations made in 1914, 1915, and 1916—such service can only be demanded for the transport of Government officials and troops, or for the laying out and repair of roads and irrigation works, and then only if free labour is not obtainable. Moreover, such work on roads and irrigation must be paid for. Of course the Government has power to call upon all able-bodied men for statute labour to avert or repair public disasters. Neither native rulers nor Government officials may demand personal services for their own benefit, whether gratis or for payment, from the native population.

The abolition of liability to statute labour in Java has involved the substitution of a capitation tax for natives. Capitation in lieu of personal service has also been introduced in Sumatra West Coast (1914); but in the Outer Possessions generally it is considered necessary to retain statute labour for certain purposes, since the natives in many islands will not work even for payment unless compelled, as they have all they need without working for it. The tasks imposed upon them in these cases are the construction and maintenance of roads, bridges, waterworks, market halls, &c., the guarding of public buildings, the working of ferry-boats, and the carrying of letters. Land may now be leased by the natives for their own sole and unencumbered use.

III. SOCIAL AND POLITICAL CONDITIONS

(1) RELIGIOUS

THE religion of nineteen-twentieths of the population of the East Indian Archipelago is Mohammedanism, first introduced, according to Malay tradition, from Further India into Sumatra early in the thirteenth century. A form of Hinduism, modified by Polynesian religions, had been already established in Sumatra; and the Mohammedanism that soon spread to other islands was a blend of all these religions. Islam, as professed to-day throughout the Dutch possessions, though now purified by closer intercourse with Mecca, still bears traces of Hinduism and animism. Law and custom, too, have been profoundly influenced by religions that play so great a part in the daily life of those who profess them; and the European legislator must never forget the syncretism of Hindu, Mohammedan, and pagan ideas with which he has to deal. In Java (where the percentage of Mohammedans is greater than in any other island) the political power of Hinduism held its own till the middle of the eighteenth century; and this syncretism is apparent even to-day. While respect is carefully paid by the Dutch to the dogmas and the religious usages of Mohammedanism, they are keenly apprehensive of the danger that might arise from a too zealous propagation of pan-Islamism. The Sarikat-Islam movement is carefully watched and kept in check by the minor officials. The religion of the Tenggerese is Brahminism corrupted by animistic beliefs. There are about 26,000 Christians in Java.

(2) POLITICAL

In theory it has always been a principle of Dutch colonial policy to maintain native self-government, and, so far as practicable, in its original form. But in practice the Dutch possessions are still administered as conquests. Even in the so-called self-governing states the inhabitants have no real voice in the government, although quite recently some measure of local self-government has been conceded. But native customs and ceremonials have been sedulously respected.

Native Rulers.—Formal relations between the Dutch Government and the native rulers have always been regulated by treaties and declarations. Formerly the observance of a few simple conditions, such as the prevention of piracy, abstention from entering into relations with foreign princes, and the grant of monopolies in certain commodities, was all that was demanded. Gradually, these treaties were revised and enlarged. Those now in force guarantee, on the part of the native ruler, the protection of agriculture, navigation, trade, industry, and education, and the suppression of slavery. Since the beginning of the present century simplification has been aimed at; and in 1914 only twenty treaties of the old and complicated type were in existence, side by side with some three hundred of a simpler form known as the ‘ Short Declaration ’. In the latter the Dutch Government guarantees maintenance in return for the obedience of the ruler or ‘ Regent ’, supervision over the latter being exercised by the Resident and his assistants.

The Governor-General and Council.—The Governor-General, aided by the Council of the Indies, not only has supreme executive authority, but can of his own accord decree minor laws and regulations. He is of course bound by the constitutional principles on which, according to the 'Regulations for the Government of Netherlands India', passed by the King and the States-General in 1854, the Dutch East Indies must be governed.

The public finance of the Dutch East Indies as a whole is dealt with below (see p. 76). Each of the self-governing states has now, however, a Treasury (*Landschapskas*) of its own, into which all local taxes, fines, &c., must be paid, and the ruler's Civil List is determined annually by the Government.

Local and provincial autonomy of administration in directly governed areas was abandoned in 1903, when measures were passed giving the smaller and subordinate administrative units a certain degree of autonomy in regard to their own local affairs. In 1905 laws came into force approving the formation of provincial, district, and municipal councils—these terms relating to Residencies, districts, and towns respectively. The first members were nominated by the Government, but the elective principle was introduced in 1908.

With the exception of the two Principalities of Surakarta and Jokyakarta, established by the Dutch in 1755 when they broke up the empire of Mataram, every province in Java has its provincial council. Eighteen towns possess municipal councils, fourteen being in Java, four in the Outer Possessions. Residents, however, are the supreme administrative officials in all territories where there are not Governors.

Residencies.—The Residencies of Sumatra are enumerated in *Sumatra*, No. 83 of this series, p. 1.

Borneo is split into two Residencies for administrative purposes, the one called West Borneo, the other South and East Borneo. The former is divided into nine districts, the latter into six.

Most of the Lesser Sunda Islands are components of the Residency of Timor, the seat of which is at Kupang in south-western Timor. Bali and Lombok, however, form one Residency, the seat of which is at Singaraja on the island of Bali, with various assistant Residencies and other subdivisions. Sumbawa and the western part of Flores belong to the Residency of Celebes and Dependencies.

North New Guinea is a division of the Residency of Ternate, while West New Guinea and South New Guinea are divisions of the Residency of Amboina.

Southern Celebes is governed from Macassar, which is the seat of the Government of Celebes and Dependencies, as well as of an assistant Residency. The northern part of Celebes forms the Residency of Menado, while a portion of eastern Celebes is still included in the Residency of Ternate.

A Governor has somewhat wider powers than a Resident; and the Governments of Atjeh (Achin), Sumatra East Coast, and Celebes and Dependencies are maintained chiefly because the populations they control have required severe military repression in the past, and might again give trouble.

Public Loans.—The Provincial, District, and Municipal Councils are empowered to borrow money, when sanctioned by an ordinance, which states how the loan will be redeemed and a minimum rate at which it will be issued. At the end of 1914 four provinces and seven municipalities had loans running at rates of interest which varied from 3·2 per cent. to 6 per cent. The total nominal amount was fls. 5,486,600, of which fls. 5,211,827 had been placed. The municipality of Surabaya, for instance, has taken over the waterworks from the Government at a yearly interest of 3·2 per cent.

Law.—The legal system falls under two heads: (1) law and jurisdiction for Europeans and those enjoying the same rights, of which the main principle is that the law and its administration should be similar to that of the mother country; (2) law and jurisdiction for natives and those enjoying the same rights (Chinese, Arabs, and other Asiatic or African natives). The object is to adapt the civil law and its administration as much as possible to the native law, based as it is upon Mohammedan principles, and to make the criminal law almost identical with that for Europeans.

The convictions on criminal charges in the year 1911 totalled 16,842, including 124 European men and 7 European women. 12,808 native men and 460 women were sentenced in the name of the Queen; 533 men and 11 women were sentenced in the names of native rulers. Also 2,899 Eastern aliens, including 114 women, were sentenced in the name of the Queen. Under the heading of misdemeanours and torts, in 1911, 45,141 persons were charged in European and native courts of first instance and 94 in appeal, while 482,094 persons were charged in police courts and 88,650 in Regents' and district courts. In Java and Madura minor civil and criminal cases (natives only) are heard in the Regents' or district courts, which are held by the Regent or Head of the district as the case may be. The number of civil cases, excluding appeals, heard in 1911, were 6,175 in European courts and 45,987 in native courts.

(3) NAVAL AND MILITARY ORGANIZATION

Army.—The colonial army (entirely separate from the Netherlands home army) consisted in 1916 of 1,139 officers and 38,196 men of whom 8,657 were Europeans.

Navy.—The Netherlands navy in the East Indies consisted in 1916 of 27 warships manned by 251 officers and 3,355 men, of whom 2,024 were Europeans. A colonial navy consisting of 22 vessels and manned by

906 officers and men performed duties which were to all intents and purposes civil.

The cost of upkeep for both army and navy was estimated to amount to £6,155,576 for 1917.

The defence of the East India possessions has exercised public opinion in the Netherlands a great deal in recent years. A State Commission appointed to examine the question published its report in 1913, of which the main conclusion was that adequate defence could only be undertaken by naval forces; and that, in order to allow for the provision and maintenance of these on an adequate scale, the amount spent on the upkeep of a Dutch army in the East Indies should be considerably cut down. Recommendations involving large increases of expenditure by both the Netherlands and the East Indian exchequers were accordingly made.

(4) EDUCATIONAL

Unwillingness to oppose the religious inclinations of the Mohammedan population by repressing the teachings of Islam that permeate the instruction given in the native *dessa* or village schools has greatly retarded the spread of Western education throughout the East Indian Archipelago. Another potent factor has been the struggle for existence, which set a premium on the employment of child labour. Till 1816 no attempt was made by the Government to establish State schools, and not till 1848 was any sum voted for the establishment of Government schools for natives only.

Elementary education for natives was provided in 1912 in Java and Madura in 795 Government schools with 160,733 pupils and 478 private schools with 49,484 pupils. In the Outer Possessions there were 442 Government schools with 81,147 pupils and 1,987 private schools with 138,327 pupils. There were also in Java and Madura, 2,531 *dessa* schools with 166,965 pupils, where elementary instruction was given in the vernacular. The cost to the Government of education for natives was in 1912, 5,017,701 guilders (£418,000).

Elementary education for Europeans and others assimilated with them was provided in 1912 in the whole of the East Indian possessions in 247 schools for 26,453 pupils, at a cost to the Government of 3,431,649 guilders, and secondary education in 20 intermediate schools for 3,845 pupils at a cost to the Government of 913,863 guilders.

Out of a population of roughly 45,000,000, therefore, instruction was provided for only 626,954 pupils at a cost to the Government of 9,363,213 guilders (£780,000).

GENERAL OBSERVATIONS

Present Material Condition of the Natives

In 1895 a financial expert, N. P. van den Berg, wrote:

> On the whole the state of affairs, so far as European enterprise is concerned, cannot be called prosperous, and, considering the prominent place European enterprise occupies in the economical development of this colony, it is scarcely surprising that the same conclusion also applies to the general welfare of the country.

Eight years later a member of the Netherlands Parliament, H. van Kol, wrote:

> The Javanese are sinking deeper into poverty. This is no longer a contention but an indisputable fact. Many districts of the island are over-populated; annually 500,000 fresh mouths ask for food, and the soil, exhausted and impoverished, produces even less rice, and of poorer value. . . . The large majority of the natives have grown so poor that insufficient food predisposes them to epidemics. . . . Why this state of misery in rich Java? Why such want in one of the most fertile portions of the globe? Because the Javanese were made to labour while others acquired riches at the cost of native want—

because the avarice of the white man sucked the land dry and caused the native to drop under the heavy burden of the chains we laid upon him.

And the following is taken from C. Th. van Deventer's *Overzicht van den economischen toestand der inlandsche bevolking van Java en Madoera*, published in 1904 at the instance of the Ministry of the Colonies :

> The staple industry of the native is what it has been from time immemorial—agriculture. The number of those who have to find sustenance from this industry has considerably increased. The increase in the size of the area under cultivation has, however, in the last quarter of a century, not been proportionate to the increase in population (the irrigated areas having increased least of all), and the increase in cattle has also been comparatively small.
>
> Though in the low-lying land the cultivation of sugar has greatly increased since 1880, it has brought the landowner little profit, while the industries connected with it bring the workers small and ever-decreasing wages. The cultivation of indigo must soon be entirely abandoned; and that of tobacco just holds its ground in one district only, though not without difficulty.
>
> The profits accruing from the cultivation of coffee by the Government are but a shadow of what they were twenty-five years ago ; and the progress made in the cultivation of quinine and tea by private enterprise, chiefly limited to Western Java, where low wages rule, does not compensate for the decline in the cultivation of coffee by private planters.
>
> On the whole, Javanese agriculture must be regarded as decidedly declining, this decline revealing itself in a constant dearth of money that has brought a great part of the population into the hands of usurers and consequently into greater straits. The sources of revenue other than agriculture have not appreciably increased during the last twenty-five years. Manufactures occupy a very modest place ; those of an indigenous nature have scarcely maintained their position.
>
> Fisheries and fish cultivation have failed to keep pace with the increase in population ; and fish as a food has had to be replaced by other imports.

It is quite exceptional to find a trade that furnishes a wage enabling the native to procure more than the bare necessities of life. The average income of a household in the agricultural, fishing, or small trading classes, who certainly form nine-tenths of the whole population, may safely be computed at 80 guilders (£6 15*s*.) per year, hardly ever exceeding 100 guilders (£8 6*s*. 8*d*.). From this sum about 9 guilders (15*s*.)—fully eleven per cent.—must be deducted for the payment of taxes in cash; if the taxes in labour and land, still imposed on a large proportion of the population, are also taken into consideration, this raises the total taxation to nineteen per cent. or more.

Since the above was written rubber enterprises have come into being, and in 1914 there were 674 rubber estates in the Dutch East Indies, comprising 326,143 *bouws* (1 *bouw* = 1¾ acres) cultivated with rubber alone and 130,281 *bouws* planted with rubber together with other cultures. The condition of the natives appears to have steadily improved during the last twenty years.

English business men who have resided recently in Java speak in enthusiastic terms of the richness of its soil, and have no fault to find with the official methods of controlling the natives. There are even many who claim that the compulsory cultivation system served a beneficent purpose by teaching the indolent native, albeit in a hard school, habits of industry and perseverance.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) Internal

(a) *Roads*

The road system in Java is admirable. The whole island is covered by main roads, post roads, cross roads, and by-roads, and every part can be reached by wheeled traffic. It is estimated that of the roads maintained by the Government in Java and Madura there are about 3,500 miles of first-class roads, 3,900 of second-class, and 7,500 of third-class. A magnificent road, constructed during the French occupation, runs along the whole northern side of the island. The roads are well kept, in spite of the heavy rainfall, and on the main roads fresh horses or petrol can be obtained at intervals of 5 or 10 miles. The Government spends money freely on repairs and improvements, which are carried out by paid native labour. Many plantation companies maintain private roads of their own.

(b) *Rivers*

As means of communication the rivers of Java are relatively unimportant. The only ones navigable by vessels larger than native praus are the Tjiliwong, Tjitarum, Tjimanuk, and Tjitanduwi, in West Java, the Serayu, in Middle Java, and the Solo and Brantas, in East Java. The Solo is navigable by small vessels for 310 miles, and large ocean-going vessels could use its estuary if it were not for sand-banks. The Gentung, a tributary of the Solo, is also navigable in parts. Many attempts have been made to improve the rivers, but the continual deposit of silt and growth of weed prevent any success.

(c) *Railways*

At the end of 1914 there were over 1,500 miles of railway in Java, also 1,311 miles of steam tram-lines, and an electric tram-line at Batavia, 11 miles in length. All the standard-gauge railways are controlled by the State, except one belonging to the Nederlandsch-Indië Spoorweg Maatschappij ; this line is about 128 miles in length, and runs from Semarang to Surakarta and Jokyakarta. The State also owns about 51 miles of narrow-gauge lines. Most of the steam tram-lines are privately owned.

The service of trains and trams is punctual and safe. A limited express, with a refreshment car, runs daily in each direction between Batavia and Surabaya (about 480 miles). The electrification of the railway from Batavia as far as Bandung will shortly be effected. All the railways pay excellent dividends. In 1914 the Government standard-gauge railways in Java and Madura carried 39,212,177 passengers and 4,569,015 metric tons of goods ; their net revenue was fls.[1] 14,044,955, which represented 6·71 per cent. on the total capital invested.

The network of railways in Java is being extended. Between 1906 and 1914 the sub-department dealing with new permanent ways opened about 236 miles of track to traffic, and, as each extension immediately becomes profitable, the Government has every encouragement to undertake further developments. In December 1912 permission was granted to build a line from Cheribon to Kroja, 97 miles in length, to shorten the journey between Batavia and Surabaya. At the end of 1914 there was also under construction a line connecting the State railway at Banjar with the plain of Parigi.

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[1] 1 florin = 1*s*. 7·8*d*.

(*d*) *Posts, Telegraphs, and Telephones*

In 1914 there were 542 post and telegraph stations in Java and Madura. Couriers, mail carts, horses, and boats are used to convey letters in parts where there is no railway or tramway. The Government's land telegraph lines in the Dutch East Indies in 1913 extended over 14,524 miles, and its sea cables and subterranean lines over 6,116 miles.

The Government controls the telephone system. There is telephonic communication between most of the principal towns in Java, and there are excellent local telephone installations at Batavia, Surabaya, and other towns.

(2) EXTERNAL

(*a*) *Ports*

(i) *Accommodation.*—The four principal ports of Java are Batavia, which has no harbour of its own, but depends upon that at Tanjong Priok; Surabaya, on the Strait of Madura; Semarang; and Tjilatjap.

Batavia and *Tanjong Priok.* At Batavia large ships anchor in the roads about a mile from the pier-head, in 5 or 6 fathoms. Vessels are discharged and loaded by lighters.

Tanjong Priok lies about 4½ miles east of Batavia, with which it is connected by rail and canal. The roadstead is 24 miles in length and 8 miles in width. The harbour is near the mouth of the Tjiliwong. The outer harbour, 6,000 ft. long and 136 ft. wide at the entrance, is enclosed between two jetties of hewn stone. The inner harbour is 4,000 ft. in length and 500 ft. in width, with a depth of 28 ft. at spring tide and 24 ft. at neap tide. There are quays 4,400 ft. in length, and there is a Government cylinder floating dock for the use of hoppers and dredgers, besides a dry dock and a cylinder dock belonging to the Tanjong Priok Dry Dock Company. Extensive alterations in the inner harbour are in progress. When they are completed there will be about 1,180 ft. of quay with a depth of 40 ft. alongside, about 11,480 ft. of quay with a depth of 26–30 ft. alongside, a floating dock for vessels up to 4,000 tons, and ample room for go-downs and warehouses. The railway terminus will have to be removed to make room for these extensions.

Surabaya is the naval port of the Dutch East Indies, and vessels drawing 28 ft. can enter the Dutch Naval Basin. Merchant vessels, however, can only enter this basin by special permission, and as a rule have to anchor in the roads to the north of the town, in 6–10 fathoms. Goods have to be brought by lighters from the roads to the quays of the old port. The harbour has two entrances, both with bars, the depth at high water spring tide being about 24 ft. at the western entrance and 22 ft. at the eastern. In 1914 it was announced that the Kalimas river at Surabaya was to be deepened and widened, and that a large basin, 3,281 ft. square, was to be constructed for lighters. A considerable area of marshland has been reclaimed, and space provided for the storage of coal, petroleum, and general merchandise.

Semarang, at the mouth of the little river Semarang, attracts nearly all the trade of Middle Java, and would be the principal port in the island if it had a better harbour and a safer and more capacious roadstead. The depth of the harbour entrance at spring tide is 7½ ft. at high water, and 5½ ft. at low water, while the depth alongside the quays at high water spring tide is 8½ ft. A breakwater at the mouth of the river forms a harbour for lighters and small vessels. The water is 9 ft. deep near the end of the pier, which is about 1,500 ft. in length, and is to be extended by another 1,312 ft. The harbour has to be continually dredged. There is a small dock for passenger steamers and tugs, but it can only be used at high water. There is a crane capable of lifting 25 tons. A small fishing harbour and a new harbour for lighters are under construction.

Tjilatjap is the principal port on the south coast of Java, and its importance is increasing with the development of agriculture in the southern part of Middle Java. At the harbour entrance there is a depth of 24 ft. at low water spring tide, and of 26 ft. 5 in. at low water neap tide. Vessels of 18 ft. draught can load at the wharf at low water spring tides, and vessels of 23 ft. draught have used part of the jetty at low water. There are three movable cranes capable of lifting 2–3 tons, and a 15-ton fixed crane.

The chief of the smaller ports of Java are as follows:

Banyuwangi is on the Strait of Bali. There is no bar; the entrance to the harbour is marked by nine buoys. The inner anchorage, divided from the outer by a newly formed sandbank, has a depth of 9 fathoms, and the outer anchorage has a depth of 11–13 fathoms; both furnish a good holding bottom. The outer portion is safer during the east monsoon owing to the high seas that prevail. There is a crane to lift 1½ tons.

Kraksaan is in Pasuruan, 11 miles east of Probolinggo, and has a fine anchorage 1½ miles from the shore in 8–9 fathoms.

Paiton is 3½ miles east of Kraksaan, and has an anchorage three-quarters of a mile from the pier in 10 fathoms.

Pekalongan is on the north coast of Middle Java, and has an anchorage 1½ miles from the shore in 3½ to 4½ fathoms, but the bottom is soft.

Probolinggo is on the Strait of Madura, and has a fine anchorage half a mile from the shore in 7 fathoms. At the entrance to the harbour is a long mole, with a lighthouse. The harbour consists of a great oblong basin, and the quays, at which vessels can moor, are provided with warehouses for coffee, sugar, and tobacco.

There are natural harbours on the south coast of Java in *Wijnkoops Bay* and at *Pajitan*, but the Dutch have not desired to attract trade to the south of the island for fear of exposing it to the attack of a hostile Power.

(ii) *Volume of Trade.*—The following table shows the number and tonnage of vessels calling at the four principal ports of Java in 1913:

Port.	*Number.*	*Tonnage.*
Tanjong Priok	1,833	3,027,534
Surabaya	1,396	2,597,400
Semarang	1,203	2,605,875
Tjilatjap	331	471,098

The figures for the period 1910 to 1914 show a steady increase in the volume of trade at each of these ports.

(iii) *Adequacy to Economic Needs.*—Java is on the whole ill provided with natural harbours. In the Strait of Madura there is a current which sweeps away obstructions, but off other parts of the coast of Java the silting up of channels and anchorages is a constant anxiety to the administration. An official investigation was made in 1910, and in 1911 plans were laid down for the extension and improvement of the harbours, with a view to probable requirements many years ahead. Officials in charge of the larger harbours are assisted by committees of prominent local men with commercial and shipping interests. The enterprises undertaken have already involved large expenditure, to be defrayed ultimately, apart from wharf, quay, and harbour dues, by the rents obtained from the leasing of plots of land adjoining the harbours. The amount spent on works in 1913 included fls. 2,622,384 at Surabaya, fls. 1,485,291 at Tanjong Priok, fls. 716,392 at Semarang, and fls. 50,000 at Tjilatjap.

(*b*) *Shipping Lines*

The *Koninklijke Paketvaart Maatschappij* is subsidized by the Government, and is required to keep up regular services between a large number of ports throughout the archipelago. It must carry mails free of charge, and convey servants of the Crown and Government property according to a fixed tariff. In 1909 a weekly fast steamer service was started, mainly for passengers, between Belawan-Deli (Sumatra) and Surabaya, *via* Singapore, Batavia, and Semarang. Before the war the two boats running were bringing from Singapore to Java every week 50 to 100 persons, who had been trans-shipped from French, German, or British boats. The voyage from Singapore to Batavia takes 38 hours, and that from Batavia to Surabaya about the same time. These two boats can take 833 and 1,082 coolies respectively as deck passengers. The company's steam and motor boats plying in the archipelago carry cargo and cattle as well as passengers.

Communication between Java and Australia is chiefly maintained by the *Java–Australia Lijn*, founded in 1911 and owned by the Koninklijke Paketvaart Maatschappij. The Government has undertaken to subsidize the service until 1920, up to a limit of half the annual deficit, on condition that the subsidies are to be gradually refunded. Twelve voyages yearly from Batavia must be made, the vessels calling at Semarang, Surabaya, Thursday Island, Brisbane, Sydney, and Melbourne, and at other ports if the company desires.

The *Java–China–Japan Lijn* was founded in 1902, and also receives a subsidy from the Government on condition that 13 voyages a year are made to China and Japan. In 1914 boats of this line made 17 voyages to China and 15 to Japan, also a number of voyages between the Dutch East Indies and Hongkong, outside the contract. The vessels start from Batavia, and call at Semarang, Surabaya, Macassar, Hongkong, Shanghai, and Kobe. Yokohama is included if a separate voyage is made to China. Banka and Billiton are regularly visited, though not under the contract, to take Chinese coolies to and from the tin mines on those islands. The Government sometimes charters vessels of this line to take Chinese coolies back to China from Banka. In 1915 the line started a monthly service between Java ports and San Francisco, which it intends to maintain with steamers of 10,000 to 12,000 tons, calling at Hongkong and Manila, and perhaps also at Japanese ports and Honolulu. This service owes its origin largely to the San Francisco Chamber of Commerce, and is most valuable for the increasing trade between Java and the United States.

The *Nederland Stoomvaart Maatschappij* and its sister company, the *Rotterdamsche Lloyd*, maintain regular weekly sailings to and from Holland. All Government passengers are compelled to travel by these ships. These two lines were jointly bound by contract before the war to perform the voyage from Genoa or Marseilles to Batavia in 25 days, and in 24 days between April 21 and October 1. They have cargo as well as mail steamers. They also, before the war, maintained a service of direct steamers between Java ports and New York, *via* South Africa, with sailings every three or four weeks.

The last two companies, together with the *Oceaan*

Nederlandsche Stoomvaart Maatschappij, have organized a special service for the transport of Mohammedan pilgrims from Batavia to Jedda. They convey about 1,600 pilgrims every year. The *Oceaan* company maintains a service of cargo boats between Java, Liverpool, and Amsterdam.

The *Java–Bengal Lijn*, founded by the Rotterdamsche Lloyd and the Nederland Stoomvaart Maatschappij, connects Java directly with Rangoon and Calcutta, with nine sailings a year, monthly during half the year and every two months during the other half. These vessels bring large quantities of rice to Java.

The *British India Steam Navigation Company*, of Glasgow, and the *Asiatic Steam Navigation Company*, of Liverpool, maintain cargo services from Java to Rangoon, Calcutta, Colombo, Pondicherry, Madras, Bombay, and Karachi, which carry large quantities of sugar from Java to India. Several British lines running from Singapore to Australia call regularly at Java ports. There is no direct service from Great Britain to Java, but before the war vessels of the *Ocean Steamship Company*, owned by A. Holt & Co of Liverpool, used to call at Glasgow and Birkenhead if they had any freight room available after loading at Amsterdam or Rotterdam.

Before the war the *Norddeutscher Lloyd* and the *Deutsch-Australische Dampfschiffs-Gesellschaft* regularly visited Dutch East Indian ports, and their share in the goods traffic had been growing rapidly.

The Japanese Government subsidizes a monthly service from Japan to Java by the *Nanyo Yusen Kaisha*, whose vessels call at Batavia, Semarang, Surabaya, Balik Papan (Borneo), and Hongkong. A new maritime trust is stated to have been formed in Japan in 1918, with a capital of 175,000,000 yen (about £17,864,500), a Government subsidy also being assured.

This would operate throughout the Far East, and the *Koninklijke Paketvaart Maatschappij* will have to meet serious competition.

There are numerous small companies at Singapore, many of them Chinese, whose vessels ply between Singapore and various ports in the Dutch East Indies.

(c) *Cable and Wireless Communications*

Java and Sumatra have been in cable communication since 1859. Banyuwangi has been connected with Port Darwin in Australia since 1872, and a duplicate cable was completed in 1879. Singapore was connected with Banyuwangi in 1879, and with Batavia (by a British line) in 1881. A French cable was laid from Saigon to Pontianak in West Borneo in 1904, and simultaneously a Dutch cable was laid from Pontianak to Batavia. The cable between Saigon and Pontianak was seriously damaged in 1913, and in June 1914 it was found impossible to repair it. In 1908 a cable was laid from Batavia to the Cocos Islands. Surabaya was connected with Balik Papan in East Borneo by a Dutch cable in 1913; Surabaya, Semarang, and Batavia were linked up with Padang, Siboga, Tampat-Tuan, and Sinabang in 1914.

It had been intended to connect all the islands of the Dutch East Indies by cables, but as the cost of laying and maintaining cables in these volcanic seas is high, the development of wireless communications has been undertaken instead.

There are wireless stations at Batavia, Semarang, and Surabaya, erected by the German 'Telefunken' Company.

In 1917 a provisional appropriation of fls. 5,000,000 was made in the Netherlands Budget estimates to provide independent wireless communication between Holland and the Dutch East Indies. For the direct service from Holland to Java the special stations required will be erected near Apeldoorn in Holland and in the neighbourhood of Bandung in West Java.

(B) INDUSTRY

(1) LABOUR

Labour is cheap and plentiful in Java. At the time of the last complete census, taken in 1905, over the whole of the Dutch East Indies the native population was only 19 per square kilometre, but in Java it was 226 per square kilometre. Most of the Javanese are engaged in agriculture, and have no ambition to undertake skilled work. Their wants are few, and they are content with wages as low as 5*d.* for a ten-hour day. Statute labour in Java and Madura has been commuted for a poll-tax, ranging from fl. 1 in Madura to fls. 2·90 in Kediri. The commutation was effected gradually, and was not completed till 1916. Personal service may still be demanded at times of public danger, and the natives may be compelled to work for pay on repairs to irrigation works, &c. The village head-men may require certain local services from people under their control, but the native rulers of provinces are no longer allowed to exact gratuitous labour.

Large numbers of Javanese are employed in factories; at the end of 1915 there were 1,800 factories in Java and Madura, employing 58,000 workmen.

The Government is anxious to encourage emigration from over-populated districts in Java to Sumatra and Celebes, but has not so far been very successful. At the end of 1914, 1,751 families, chiefly from Kedu, were transported to a colony of about 20,000 acres in Lampong (Sumatra). Small numbers of natives from West Java have also been settled in Benkulen (Sumatra), with the special object of teaching the Rejangs and the Lebongs to breed freshwater fish, but the total number of settlers, including women and children, was not more than a few hundreds between 1907 and 1914. A certain number of Javanese go to work on plantations in Sumatra and in Surinam. The system of recruiting contract coolies is described in *Sumatra*, No. 83 of this series. The majority of these emigrants do not return to Java.

The immigrants to Java include Chinese, Arabs, and other Orientals. Most of them are engaged in trade, but many of the Chinese are artisans and gardeners.

The Chinese are a very important factor in the industrial life of the Dutch East Indies. Four-fifths of the Java rice-mills are in their hands, besides many sugar factories. They are also largely engaged in the manufacture of furniture, and there are many skilled mechanics and carpenters among their number.

(2) AGRICULTURE

(*a*) *Products of Commercial Value*

(i) *Vegetable Products.*—*Cassava* was introduced to the Dutch East Indies from Surinam a century ago, and is grown chiefly in Java, where in 1917 the area under cultivation was 717,487 *bouws*.[1] The root furnishes for export tapioca flour, manufactured chiefly by the natives and by Chinese and Arabs, and also cassava cake, used as cattle food. For local use the natives obtain alcohol from it, and also starch for paper-mills. In 1913 Java exported 102,770 metric tons of cassava products.

Cereals. Maize is widely grown by the natives, especially in East Java, and its cultivation has been increasing in Madura. In one or two mountain districts it has superseded rice. It is a popular crop, which requires little care in cultivation and little water, though on the other hand it can bear heavy rain if the ground is well drained. The ears are quickly gathered, and the stalks are used for cattle food. At the end of 1915 there were in Java 954,570 *bouws* under maize. The export in 1913 amounted to 49,000 metric tons.

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[1] 1 *bouw* = $1\frac{3}{4}$ acres.

Rice is grown in Java and Madura, mainly on irrigated land, and the harvest in 1914 amounted to nearly 6,000,000 tons. For details of its cultivation, see below, p. 62. Before the war the best qualities of rice were exported in small quantities, but the greater part of the crop was required for local consumption, as rice forms the staple food of the natives. Moreover, it was necessary in addition to import large quantities of inferior rice, chiefly from Rangoon, Siam, and Indo-China.

Wheat for European consumption was successfully grown in Java in 1917, in view of the shortage caused by the war, and in 1918 the cultivation was extended more widely.

Cinchona. Java ranks first among the countries producing cinchona or Peruvian bark, largely because of the cheap and abundant labour available. The cultivation is carried on both by the Government and by private enterprise. In 1914 there were in Java 19,548 *bouws* planted with cinchona trees, and in that year 893 metric tons of cinchona were produced from the seven Government plantations, 739 tons from private estates, and 6,796 tons from plantations on waste lands held by hereditary lease from the Government. At the end of 1915, of the 113 cinchona plantations in the Dutch East Indies, 110 were in Java. The Bandung Quinine Factory manufactures quinine on a large scale.

Before the war, most of the cinchona bark exported from Java went to Holland, and was sold at Amsterdam by public auction. Prices, however, were steadily falling, owing to the action of some of the large German chemical firms. In 1913, therefore, after a conference between the Java producers and eight of the principal quinine factories, a trust was created. The factories undertook to buy the entire annual production of Java bark up to a quantity from which 525 tons of sulphate of quinine could be produced, at a minimum price of 5 cents per unit. The Central Office of the Kina Bureau at Amsterdam controls receipts and the analysis of the bark, and fixes the price. Between 1913 and 1916 the percentage of quinine in the bark averaged about 6, and the price rose from 4·91 cents to 11·4 cents per unit. The agreement was renewed, with some modifications, in 1918.

Cocoa. The cultivation of cocoa in Java was at one time spreading rapidly, and between 1897 and 1907 the output almost doubled. The plant, however, is very liable to pests and diseases, and planters were discouraged. In 1912 the area under cultivation was about 10,000 *bouws*, and the production amounted to 2,272 metric tons. In 1914 the output dropped to 1,186 tons, though in 1915 it rose again to 2,092 tons.

Coffee grows well in Java at altitudes up to 4,000 ft. *Arabica* and other kinds have now been almost entirely superseded by *Robusta*, which was introduced from Africa in 1901. The Van den Bosch system of compulsory cultivation (see above, p. 27) was applied to coffee longer than to any other product, and was not relinquished in Java till 1915. The production, however, had long been declining, and increasing competition from Brazil and elsewhere made coffee-growing less profitable. In 1879 the production of Government coffee in Java amounted to 1,267,167 *piculs*,[1] whereas in 1912 it totalled only 81,000 *piculs.* In 1915 Government estates yielded about 4,000 tons and private estates about 29,000 tons. In 1914 there were 382 private coffee plantations in Java, comprising 80,166 *bouws* on which coffee was planted alone, and 83,626 *bouws* on which it was planted with rubber and other crops. Under normal conditions almost the whole crop is exported.

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[1] 1 *picul* = 133·3 lb.

Cotton is grown in one or two districts only, notably in the Residency of Ṣemarang. It has little commercial value, as the fibre is rough and short, but the natives use it for weaving cloth for their own use.

Indigo grows in the *sawahs* or wet rice-fields, and at one time its cultivation was very profitable. In 1898 the yield was 1,094 tons, valued at £330,000. The manufacture of synthetic indigo, however, has ruined the industry. Indigo growing has been steadily diminishing, and in 1913 Java exported only 46 tons. There was a temporary revival during the war, when German supplies of synthetic indigo were cut off.

Kapok is obtained from the kapok-tree, which is indigenous, and grows freely by the roadsides. It is also planted to some extent, and in 1914 was grown on 92 estates, comprising 6,319 *bouws.* The natives, however, grow four times as many trees as the planters. The fibrous down is exported, and also the seeds, which contain a valuable oil. In 1913 Java exported 120,710 bales of kapok and 19,479 tons of seeds.

Oil-producing Plants. The *coco-nut palm* is indigenous to the Dutch East Indies, and will grow in Java up to a height of 3,000 ft., though it is at its best in low, sandy districts near the coast. The natives have long been accustomed to plant coco-nut groves round their kampongs, and recently scientific cultivation has been undertaken. It was estimated at the beginning of 1918 that there were 63,533,000 coco-nut palms in Java, of which 37,234,000 were bearing. Copra is in increasing demand in the world's markets on account of the oil it contains, which is used for making soap, candles, and margarine. The coco-nut fibre is used locally for making mats, brushes, &c., and is also exported. Factories for preparing the oil were set up in Java during the war. In 1917 production of copra amounted to 323,913 tons, of which about 60,000 tons were exported, while 40,000 tons were worked in the local factories. The rest was treated by the natives, whose primitive methods secure only about 50 per cent. of the oil, whereas in the factories about 70 per cent. can be extracted. The residue of the crushed copra makes valuable cattle food. The copra industry is becoming increasingly profitable. Whereas in 1900 all the products of the coco-nut palm exported from the Dutch East Indies amounted in value to only £420,000, in 1914 the copra alone was worth £5,000,000.

Java and Madura contain many other kinds of oil-producing plants. Early in 1918 the managing director of the Oliefabriek Insulinde, of Bandung, estimated the annual production as 100,000 tons of ground-nuts, 5,500 tons of castor-oil seed (*djarak*), 68,730 tons of soya beans (*kedelee*), 2,500 tons of sesame seeds, and 21,800 tons of kapok seeds; it is thought that this estimate is very modest.

Opium is now a State monopoly, and its private cultivation and sale are forbidden (see below, p. 79). The Government erected an opium factory at Batavia in 1901.

Rubber. Java has an ideal climate for rubber cultivation. *Ficus elastica* is indigenous, but the trees are so large that not many can be grown per acre. *Hevea brasiliensis* (Para rubber) was introduced as long ago as 1887, but it was not till 1904 that cultivation on a commercial scale was begun, and not till

1913 that the Government abandoned the preferential treatment of *Ficus*. *Hevea* requires a great deal of rain, and is planted mainly in West Java, where there is a heavy rainfall. In 1914 there were 408 rubber estates in Java, 142,128 *bouws* being planted with rubber alone, and 87,073 *bouws* with rubber together with other crops. There are both Government and private plantations. The production rose from 6,782 tons in 1914 to 13,938 tons in 1916. The export of wild rubber from the Dutch East Indies was increasing during the same period, but separate figures for Java are not available.

Spices, &c. In 1913 Java exported 55 tons of *mace* and 169 tons of *nutmegs*. *Cinnamon* used to be widely grown, but is now of small importance. The *pepper* trade, once considerable, has dwindled in importance, but in 1912 about 238 tons of pepper were prepared in Java. The export of pepper from Java in 1913 amounted to 14,720 tons, the bulk of the produce coming, however, from Sumatra.

Sugar. Sugar-cane is grown chiefly on the *sawahs*, and great care has to be taken over drainage and irrigation. Compulsory cultivation ceased in 1891, since which date the area under sugar-cane has quadrupled, while the yield of sugar is ten times as great. In 1914 the area planted was 207,800 *bouws*, and 1,453,380 tons of sugar were produced. In 1916–17 Java contributed about 1,600,000 tons to the world's output of 16,680,000 tons of sugar. The process of sugar manufacture in use in the Java factories is the most modern in existence, the yield being about 4 tons per acre, but the machinery needed is very costly. The natives make a coarse brown sugar from the sap of the nipa and sugar palms.

Tea used to be a Government monopoly. It is mainly planted in the Preanger Residency. China tea used to be grown exclusively, but is now being replaced by Assam tea and hybrids. Tea grown in Java has not the strength of Indian nor the flavour of the finest China, but it is pure and wholesome and has a good reputation. In 1902 an experimental station was opened at Buitenzorg to give information to planters, and a Tea Export Bureau has been started at Batavia to give advice to merchants. In 1913 a Tea Seed Control Office was opened at Tanjong Priok, as much of the seed imported from Assam had arrived in bad condition. The tea crop in 1917 was about 45,000 metric tons.

Tobacco for European use is grown chiefly in Middle and East Java, and thrives up to an altitude of 6,000 ft. Planting is largely carried on by natives, who can buy good planting material by the help of the popular credit banks. The European estates buy up their produce. Experimental stations have been opened at Klaten and Jember to advise tobacco planters. Generally speaking, this tobacco fetches lower prices than that grown in Sumatra, but the preparation is less expensive, and the quality is remarkably uniform. In Kedu, Pasuruan, Pekalongan, Rembang, and Preanger the natives grow a coarse tobacco called *krossok*, which requires no special care and can be grown in rotation with rice. Its leaves are too small for the European trade, but the natives smoke it rolled in a piece of maize leaf, and also chew it. Krossok is largely exported to Singapore, and from there it is re-exported to Borneo and other parts of the Dutch East Indies. In 1895 the tobacco exported from Java to Europe amounted to 9,807 tons, while in 1907 the export had risen to 37,892 tons.

Other products of minor importance are *rattans*, fibres such as *manila hemp* and *sisal hemp*, the nuts of the *areca* palm, which the natives chew with betel leaves, and tanning material obtained from two kinds of acacia.

(ii) *Live-stock and Animal Products.*—*Buffaloes* are the commonest domestic animals, and are kept, especially in the west, for ploughing and for draught purposes. Their flesh is eaten fresh or salted.

Cattle are bred, especially in Middle and East Java, while the natives of Madura are expert cattle-breeders. Up to 1905 the stock was not increasing proportionately to the growing needs of the country and the extension of cultivated land. Since that date, however, the slaughter of cattle has been placed under restrictions, and the breed has been improved by the introduction of zebu cattle from India. The natives consume little milk or beef, the animals being used almost entirely for draught purposes.

Goats and *sheep* are bred for their meat, and *pigs* mainly for sale to the Chinese.

Horses are not methodically bred, but there is a local breed which, though small and ugly, is strong and enduring.

Silk. The growth of the mulberry-tree in Java is slow on account of the damp. There are three silkworm breeding establishments in Java, but only one, at Pangkalan, has yielded profits. The Government is now encouraging the industry, and it is hoped that better breeds and improved methods may be introduced.

(*b*) *Methods of Cultivation*

The Javanese, generally speaking, take no interest in crops requiring continual care. The only exception is with regard to rice, the cultivation of which, according to ancient Hindu law, is a religious duty. The attitude of the natives, however, is very conservative, and they continue to till their rice-fields by traditional and wasteful methods and with the help of primitive implements.

Rice is grown either in *sawahs* (wet fields) or *tegals* (dry fields). The former are level plots surrounded by dikes, which allow water to be admitted or excluded as required. On sloping land the fields are terraced so that the water may trickle from one to another, and by this means rice can be grown up to an altitude of 3,500 ft. The rice is sown in the *sawahs* at the beginning of the rainy season, either by the whole ear, according to tradition, or more economically in grain. The soil is then flooded by day and drained by night, and after a month or six weeks the shoots are transplanted. Thenceforward the soil is alternately flooded and drained every few days until the harvest, which usually takes place in April or May. Each ear is gathered by hand, with a small curved knife. The rice is then stacked, dried, and pounded to separate the grain from the straw. The grain is husked in primitive mills worked by buffalo traction or water-power. Formerly it was usual to get a second or even a third crop from the soil, which thus became quickly exhausted; but the Government now encourages the natives to sow potatoes or artichokes after the rice harvest, or, in West Java, to convert the *sawahs* into fish-ponds till the next rice-sowing.

The *tegals* depend entirely on the rainfall. The earth is loosened with the *patjol*, a primitive hoe, the surface smoothed and cleared, and the rice placed in holes about 8 inches apart.

Irrigation.—Irrigation has been under Government control since 1895, and is now directed by a special division of the Public Works Department. At the end of 1914 there were twenty important irrigation works in use in Java and Madura, and fls. 6,177,802 were spent that year on the construction of irrigation and drainage works. About 21 per cent. of the total area of irrigated land in Java was supplied with water by permanent works, 7 per cent. had permanent works in course of construction, 17 per cent. had been surveyed for works, and the remaining 55 per cent. depended solely upon rain. The rivers of Java, especially those flowing northward, have been extensively utilized for irrigation purposes. Water is supplied through canals to areas requiring it, the distribution being left to the natives. The supply is used first for the rice-fields, which are planted during the west monsoon, and afterwards for the sugar-fields, which require water during the east monsoon only. Secondary crops, when water is scarce, can be watered only during certain hours of the day and at night.

(*c*) *Forestry*

The forest zone in Java extends to a height of 2,000 ft., and is said by one authority to cover as much as 72 per cent. of the surface of the island. In East Java there is monsoon forest, with deciduous trees, while in the west there is tropical rain forest, with an extraordinary diversity of trees. There is a Government Department of Woods and Forests which forms reserves, issues regulations as to felling, &c., and carries on experimental cultivation and reafforestation.

There are between three and four hundred varieties of timber trees in the Java forests. The most valuable is *jati* or *teak*, which occurs mainly in Middle and East Java. The State maintains an absolute monopoly of the teak forests, though some are leased, under strict supervision, to private undertakings. Most of the trees grow wild, but they are also cultivated by planters, who set rice, tobacco, and maize between the rows of young trees. In 1914 there were in all

686,373 hectares[1] of teak forests in Java, of which 194,494 hectares were artificially cultivated. The wood is used extensively throughout the Dutch East Indies for shipbuilding, railway sleepers, building, and furniture, and the export is diminishing as local needs develop.

All other trees are classified as wild timber. The most valuable are *ebony*, *sandalwood*, and *balian* or *ironwood*. Most of the other trees grow too rapidly to form timber of good quality, but in view of the rising price of teak the natives have been obliged to fall back upon wild timber for many purposes. Wild timber is exploited chiefly in Preanger, though forestry there was in the past hampered by restrictions on transport. The natives put *bamboos* to a multitude of uses, while from the mangrove forests on the coasts they obtain firewood and bark for tanning.

(*d*) *Land Tenure*

The greater part of the soil of Java is Government property. A few private estates are owned by Europeans or Chinese.

Among the natives collective land-holding is customary. A native possesses as individual property the plot on which his house is built, and receives from the chief of his village every three, four, or five years a field to furnish sustenance for himself and his family. This system is a bad one, for the individual takes little interest in a field which is to pass to other hands after a short time, and chiefs are apt to give the best land to relatives. The Dutch Government does its utmost to prevent the native being despoiled of his land by Chinese or European speculators.

Adat, or native law, which is based on the religions, customs, and institutions of the natives, remains generally in force, Dutch civil and mercantile law being applied only where the *adat* is defective.

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[1] 1 hectare = 2·47 acres.

(3) FISHERIES

Deep-sea, coast, and river fishing are carried on, and there are salt-water ponds for breeding purposes all along the north coast of Java, especially in the eastern part of the island. The Residency of Surabaya contains 47,000 *bouws* of these ponds, out of a total of about 78,000 *bouws* in the whole of Java. Credit facilities have been afforded to foster deep-sea fishing, and ‘ fish banks ’ are established in places which appear to need them. The Government, which has a monopoly in salt, supplies it at a reduced price for preserving fish.

Fish are abundant, and most of the species are edible. The natives consume large quantities fresh, but a certain amount of dried fish is generally available for export, though in 1914 it was necessary to import 43,725 tons of dried and salted fish into the Dutch East Indies.

Trepang, or *bêche-de-mer*, is fished on the coasts, for export to China. Turtle and tortoise shells are also collected.

(4) MINERALS

Java and Madura are very poor in minerals as compared with Sumatra and Borneo.

Coal was discovered in 1829 in the Bajah fields near Wijnkoops Bay, but it is of inferior quality and has never been seriously worked.

Copper is found chiefly in Madiun, and occurs in the Preanger highlands, but has never been mined scientifically. It is not believed to exist in large quantities anywhere.

A few traces of *gold* have been found in Java, but there is no gold-mining.

Iodine is obtained from many hot springs, especially in the Residency of Surabaya, and the export of iodide of copper in 1913 amounted to about 58 tons.

About 4½ tons of *manganese* ores were produced in Jokyakarta in 1907. Several concessions have been granted to work manganese and other ores in the sands of the south coast, but the production so far has been of no importance. In 1918, however, the wealth of these deposits was reported to have been verified by Government officials.

Marble is worked at Wajak in Kediri, and Belgian and Dutch experts have declared that this marble is hard, firm, and equal to the best qualities of Italian, Belgian, and French. It is used chiefly for tiles.

Mercury has been found in minute particles in the clay soil of the *sawahs* along the rivers of the lowlands of Demak in Semarang.

Petroleum. The centres of petroleum production in Java are the provinces of Surabaya and Rembang, in the north-east. Before the war the annual production from these areas was about 35,000 and 73,000 tons respectively. The production in Madura is growing in importance. Shafts are generally sunk on the Canadian principle, but the washing method of boring is sometimes employed. The deepest well in Java has a depth of about 1,000 metres (3,280 ft.). Generally speaking, Java oils have a low specific gravity and high contents of benzene and lamp oil. Kerosene is the chief product, while among the by-products are benzene, liquid fuel, lubricating oil, asphalt, paraffin wax, and turpene. Liquid fuel is used in the sugar refineries, and is stored at Tanjong Priok and Surabaya for supplying ships. Batching oil, for the batching or softening process in the jute industry, is exported to British India. Asphalt and paraffin wax are sold in Java, the latter for use in the *batik* industry (see below, p. 68). Turpene serves as a substitute for turpentine.

Nominally the supreme authority in the purchase, manufacture, transport, and distribution of petroleum in the Dutch East Indies belongs to the Koninklijke Petroleum Maatschappij, founded in 1890, which is closely connected with the Shell Transport and Trading Company, London. The crude petroleum is obtained and the product manufactured by the Bataafsche Petroleum Maatschappij, founded in 1907 (see *Sumatra*, No. 83 of this series). This company has refineries in Java at Tjepu (Rembang), Wonokromo, (Surabaya) and Semarang, and the area of its concessions in the island is 245,000 acres. The shipping of the petroleum is controlled by the Anglo-Saxon Petroleum Company. Distribution outside the Dutch East Indies is managed by the Asiatic Petroleum Company and within them by the Dordtsche Petroleum Maatschappij.

Salt is a Government monopoly (see below, p. 78). There are saline springs in all parts of Java, and those at Tjiampel in Krawang yield a brine containing nearly 3 per cent. of salt. The natives evaporate the salt in cauldrons or tanks, and have to pay a royalty in proportion to the amount produced. In Madura the Government manufactures salt from sea-water by European methods, and has two factories for making the salt into blocks.

Sulphur. In 1913 the amount of sulphur produced was 1,236 tons, and in the two preceding years 875 and 305 tons respectively.

Small quantities of *wolframite* are found.

Mining Laws.—The State claims the ownership of the entire subsoil in the Dutch East Indies, and for private exploitation it is necessary to obtain a licence to prospect and then a working concession. Except in the case of petroleum, a prospecting permit is granted to Dutchmen or foreigners domiciled in the Dutch East Indies for a certain length of time. It is granted in the first place for three years only, but may be extended for a maximum of two years further. A concession is only granted if the mineral sought for lies within the limits of the area for which the prospecting permit has been issued, and if its exploitation is technically practicable. Work must be begun in the first year. The concession may be renewed indefinitely for terms of seventy-five years.

The State imposes a fixed tax of 50 cents per hectare, or rather more than 4*d.* per acre, on the area of a concession, and a royalty of 4 per cent. on the gross yield of a mine. The prospector's permit is subject to an annual tax of 5 cents per hectare, or less than ½*d.* per acre. Products of prospecting may be disposed of without restriction up to a certain maximum assignment for each mineral, after which the royalty of 4 per cent. on the gross yield is payable.

Licences to prospect for petroleum and concessions for working are granted only to Dutch subjects domiciled in Holland or the Dutch East Indies, or to companies incorporated under Dutch law in the same places. A prospecting licence is issued for three successive years, on payment of an annual tax of fl. 1 per 100 acres. The maximum area covered by a single licence is 25,000 acres, but several licences may be applied for simultaneously. Concessions are granted when prospectors can prove that petroleum has been struck in sufficient quantity to be of commercial value. Each concession is confined to an area not exceeding 10,000 acres, the whole of which must be covered by the same prospecting licence. Concessions are usually granted for 75 years.

(5) MANUFACTURES

The principal native industry is the *batik* industry, which consists in making coloured patterns upon white cambric imported from Europe. The fabric is plunged into a series of baths of dye, different portions of the design at each immersion being protected from the dye by a thin coating of wax. The finished product is sold locally, and also in British India and the Malay Peninsula. Cambric for this purpose used to be imported to a yearly value of about fls. 30,000,000, but the industry is diminishing as printed calicoes imported from Europe become more popular.

The natives make hats of bamboo rind in their own homes for European employers who undertake the export. They also make pottery and baskets, work in copper, and forge and ornament *kreeses* or Malay daggers, but none of these minor industries is of much commercial importance.

The Java factories include not only those dealing with agricultural produce, such as rice, vegetable oils, sugar, and vegetables for preserving, but also others making machinery, cement, tiles, ice, mineral waters, spirits, &c. The shortage due to the war has caused an extension of the activities of Java manufacturers; large machinery and chemical products essential to the sugar industry have for the first time been made within the island. Numbers of motor-boats, wherries, and native sailing-vessels have been built, and there are proposals for undertaking the construction of large iron ships. Leather tanning is increasing in importance, as leather produced locally can be sold more cheaply than that imported.

(6) POWER

Hydro-electric installations have not yet been introduced, except experimentally, but the electrification of the railway between Batavia and Bandung is in progress, and it is expected that in the near future there will be a rapid development of hydro-electric installation in the Preanger highlands.

(C) COMMERCE

(1) DOMESTIC

(a) *Principal Branches of Trade*

Trade in bulk is conducted by European firms in Batavia, Surabaya, and Semarang, which are distributing centres for the whole of the Dutch East Indies. Retail trade is in the hands of the Chinese and Arabs. The Chinese are industrious and able organizers, and their activities as middlemen are important in the economic life of Java. They have their chief houses at Batavia, Surabaya, and Semarang, but send agents all over the country, inducing the natives to buy imported goods, and advancing money on native crops, which are then delivered to them and sold to the European merchants in the ports.

(b) *Towns, Markets, &c.*[1]

Besides the principal distributing centres at Batavia, Cheribon, Semarang, and Surabaya, there are many other markets, while every *kampong* has an *aloun-aloun*, or small open stretch of turf which is used as a market-place. Batavia is the chief market for tea, and tin from Banka is also sold there by public auction.

(c) *Organizations to promote Trade and Commerce*

At Batavia, Surabaya, and Semarang, there are chambers of commerce, each consisting of seven members, appointed to advise the Government on all matters in which commercial information is required. In 1910 a Department of Commerce and Industry was established as a subdivision of the Department of Agriculture. It publishes statistics, market reports, and a periodical journal.

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[1] For the ports, see pp. 45-48.

Chinese trade associations were formed at Batavia and Surabaya in 1901, with the approval of the Government, and are said to be doing useful work in settling trade disputes.

(*d*) *Foreign Interests*

Though the commercial houses at the ports are mainly Dutch, there are also German, Italian, and British firms, the last-named handling much of the trade in cotton goods. Before the war the Germans formed the largest European community other than Dutch, and had enormously strengthened their position in the Dutch East Indian market.

The Japanese have the status of Europeans, but remain a race apart. Their activities had been noticeable for several years before the war, and during the war period their efforts redoubled. A large Japanese party visited the Dutch East Indies in 1916 to study commercial conditions. The Japanese shops in Batavia and Surabaya are stocked with Japanese imitations of all kinds of European goods, including toys, leather goods, rolled-gold ware, textiles, millinery, and ironware. The Japanese were reported in 1917 to be giving more attention than formerly to the better qualities in all lines.

A syndicate of business men from Tokio has recently formed the Pacific Sugar Manufacturing Co. with a capital of 6,000,000 yen (over £600,000), divided into 120,000 shares, of which 100,000 were to be taken up by the promoters, the rest being offered to the public. The Dutch Government is supporting this new company, which has been formed to purchase sugar undertakings in Java hitherto conducted by Dutchmen.

The Bank of Taiwan opened a branch at Surabaya in 1915, and in 1918 another at Batavia. In 1917 a syndicate with this bank at their head bought the Sukerejo sugar plantation for fls. 2,000,000, which was said to be more than twice its value. They were then inquiring about other estates. In 1918 the Mitsui Yusen Kaisha was seeking to acquire manganese deposits in Java.

The Chinese are very active in trade, and the value of Chinese property in Java has been estimated at more than £16,000,000.

(2) FOREIGN

Trade statistics in the Dutch East Indies are voluminous but confused. The Government treats Java and Madura as one unit, and the rest of the Colony, under the name of the Outer Possessions, as another. Much produce from the Outer Possessions, however, is trans-shipped at Java ports and therefore affects the Java figures.

(*a*) *Exports*

Quantities and Values.—The export trade of Java and Madura was steadily growing before the war. Its value rose from fls. 157,145,000 in 1900 to fls. 259,010,000 in 1910 and fls. 335,682,000 in 1914. The figures during the war were larger still, but that was due in part to enhanced prices.

The principal exports from Java and Madura in 1913 were as follows (figures for values are only available in a few cases) :

In Value.	*Florins.*
Cassava products	9,099,000
Hides	9,226,000
Kapok	6,594,000
Other fibres	5,459,000
Pepper	10,397,000
Rattans	7,267,000
Rice	9,035,000

In Quantity.	*Tons.*
Cinchona bark	9,313
Cocoa	2,069
Coffee	28,353
Copra	77,800
Ground-nuts	17,100
Gum damar	4,051
Indigo	41
Mace	49
Maize	49,000
Nutmegs	151
Oil-seeds	21,070
Petroleum	207,135
Rubber	2,517
Sugar	1,252,428
Tea	28,885
Tin	17,350
Tobacco	133,736
	Oz.
Sulphate of quinine	1,947,450

Countries of Destination.—Normally more than 33 per cent. of Java sugar goes to British India. In 1913 about 76 per cent. of the sugar exported went to ports of the British Empire, 23 per cent. to China and Japan, and 1 per cent. to Holland. In 1914 huge British purchases were made to supply the deficiency of German beet sugar, but the demand was only temporary, and large quantities of sugar were left on the hands of growers and dealers when shipping facilities diminished and England found nearer sources of supply. Java tea before the war went mainly to Holland and England, though there was an increasing demand from Russia; in 1917 the export went mainly to the United States, Russia, and Australia. Coffee went chiefly to Holland, but also in considerable quantities to France and the United States. England and Holland used to take most of the rubber, but during the war the United States became a large purchaser, taking 3,342 metric tons in 1915, 9,002 metric tons in 1916, and in 1917 no less than 14,956 metric tons out of a total of 18,959 tons exported. Tin from Banka and Billiton, trans-shipped at Batavia, went mainly to Holland, but also to France, Austria, and England. Of oil-seeds and nuts, most of the ground-nuts, areca-nuts, and sesame seeds in the period from 1915 to 1917 went to Singapore. Kapok seeds in 1917 went chiefly to Holland, though previously Great Britain had taken a large proportion. Copra in 1915 went almost exclusively to Holland, which also took the bulk of the coco-nut oil. Tobacco went mainly to Holland.

With regard to exports in general, it should be noted that many of the goods exported to Holland were intended for German consumption. One consequence of the war has been a great increase in trade between Java and the United States. The exports to the United States amounted in value in 1914 to fls. 10,000,000, in 1915 to fls. 26,000,000, and in 1916 to fls. 68,000,000. This is due largely to increased shipping facilities (see above, p. 49).

(*b*) *Imports*

Quantities and Values.—Before the war, the import trade of Java had been steadily increasing. Its value between 1895 and 1913 more than trebled. A Java correspondent of *In- en Uitvoer* in 1918 supplied the following figures, based on Government statistics, for the imports between 1913 and 1916:

	Florins.
1913	300,000,000
1914	262,000,000
1915	259,000,000
1916	287,000,000

The principal imports to Java and Madura in 1915[1] were as follows (figures for values are only available in a few cases):

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[1] Figures for 1913 are not available.

In Value.	*Florins.*
Cotton manufactures	56,161,000
Paper	847,000
Silk manufactures	1,808,000
Soap	1,377,000
Woollen manufactures	638,000

In Quantity.		
Ammonium sulphate	tons	106,751
Beer	litre tons	3,459
Butter	tons	1,667
Cement	barrels	503,055
Colours	tons	2,992
Copper	,,	301,683
Fish (preserved)	,,	1,996
Iron bars and roofing	,,	46,316
Milk (condensed and sterilized)	litre tons	5,378
Resin	tons	6,761
Rice (Rangoon, Siam, and Saigon)	,,	331,326
Wire nails	casks	181,462

Countries of Origin.—Many of the imports which came *via* Holland were of German origin. The textiles came chiefly from England and Holland; rice from British India, Indo-China, and Siam. Thirty years ago the supply of machinery, which is needed in large quantities for the numerous factories, was almost entirely in British hands, but British manufacturers have failed to keep pace with the growing demand, and in 1914 there were 35 German firms supplying machinery for the sugar industry in the Dutch East Indies. There is still a possibility of recapturing this market. American manufacturers are now becoming alive to the possibilities of trade in the Dutch East Indies. Imports from the United States have steadily increased during the war. In 1914 their value was fls. 6,000,000, in 1915 fls. 11,000,000, and in 1916 fls. 25,000,000. This development is of great importance. The principal articles supplied by the United States are automobiles and parts, kerosene, iron and steel goods, machines and tools, and tin sheets. The Japanese have done their utmost during the war to improve their position in the Java market. Imports from Japan amounted in value to about £57,000 in 1902, £200,000 in 1905, £560,000 in 1913, and £1,778,000 in 1916. The goods supplied are chiefly matches, cheap cotton cloth, glass and glassware, automobile tyres, clothing, and haberdashery. It is said that Japanese porcelain has entirely replaced German in the Java market, and is sold at prices higher than those formerly obtained for German goods. Trade between Australia and Java was fluctuating before the war, but on the whole the outlook was promising.

(c) *Customs and Tariffs*

There are no preferential tariffs in the Dutch East Indies, imports from Holland being treated in the same way as those from other countries. Government imports, iron and steel goods, machinery, and many other articles are admitted free of duty. Cotton goods, wood-work, and firearms pay an ad valorem duty of 6 per cent., most dyes pay 8 per cent., and automobiles and paper 10 per cent.

Export duties are imposed upon a few articles. Tobacco not prepared for the inland market is charged fl. 1 per 100 kg.; tin, fls. 3·50 per 100 kg.; hides, 2 per cent. ad valorem; birds' nests, 6 per cent. ad valorem; petroleum, benzene, and gasolene, 3 cents per hectolitre.

(D) FINANCE

(1) *Public Finance*

The Budget for the Dutch East Indies is framed provisionally by the Governor-General, submitted to the Home Government, and finally passed by the States-General. In 1905 the mother country took over the floating debt of the Dutch East Indies, and raised a loan of fls. 40,000,000 to cover it. In 1915 the financial independence of the East Indies was established by law, and they raised their first loan, amounting to fls. 62,500,000.

Revenue.—The revenue of the Dutch East Indies was steadily rising in the years preceding the war. The total receipts in 1907 amounted to fls. 185,000,000, in 1910 to fls. 221,000,000, and in 1913 to fls. 311,000,000. The main sources of revenue are taxation, the sale of Government produce, the profits of Government monopolies, and the receipts from public services, &c. The following analysis of the revenue in 1913 shows the amount derived from each of these sources:

Head of Revenue.	*Thousands of Florins.*
Direct taxes:	
Income tax	10,998
Land-tax	21,375
Personal property tax	1,528
Poll-tax	5,588
Trade tax	7,362
Verponding or ground tax	3,168
Other taxes	972
Indirect taxes:	
Butchers' meat tax	2,329
Customs duties	27,932
Excise	11,797
Farmed taxes	2,562
Special taxes in the Outer Possessions	3,365
Stamps, &c.	3,769
Other taxes	142
Proceeds of sale of Government produce	57,833
Receipts from Government monopolies	61,760
Public Services, &c.:	
Concessions of land and buildings	2,047
Harbour dues	1,738
Posts, telegraphs, and telephones	6,857
Railways and tramways	33,376
Miscellaneous	44,899

The principal taxes are described below (pp. 80–82). The greater part of the revenue from Government produce is derived from the sale of tin, which amounted in 1913 to fls. 41,205,000. The most important of the Government monopolies, which provide so substantial a portion of the total revenue, are those in salt and opium.

The *monopoly in salt* applies to the whole of the archipelago except Celebes, the Moluccas, the Lesser Sundas, and New Guinea, and includes control of production, sale, and importation when necessary. The manufacture of salt by natives is forbidden in Borneo and in the greater part of Sumatra. The Government obtains its supplies by the evaporation of sea-water from large pans, chiefly in Madura, and in 1914 had under its control 4,439 such pans, with a total yearly output of 114,126 *koyangs*.[1] The salt is placed in Government warehouses and retailed by natives or Europeans. The local supply is now sufficient for local requirements, but as late as in 1914 the Government had to import as much as 20,000 tons, chiefly from Egypt, Aden, and Sicily. In Java and Madura private importation, except of fine table salt, is forbidden, but in Sumatra and Borneo there are certain ports at which salt may be imported privately, on payment of duty.

The price of the Government salt varies greatly, the normal rate in Java being fls. 6·72 per *picul*, while at Long Iram in Borneo it is as high as fls. 8·96 per *picul*. Salt to be used for fish-curing, and unfit for other purposes, is supplied at fls. 2 per *picul*. Most of the salt is sold in granular form, but there are two factories in Madura where it is made into blocks. The sale is mainly in Java and Madura.

The *monopoly in opium* was established in Java and

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[1] 1 *koyang* = 1,850 kgs.

Madura in 1894, and by 1913 had been extended to the whole of the archipelago except the Residency of Ternate, where the import of opium is totally prohibited. The Government has opened a few depots at Ternate town and Labuha (Batjan). Elaborate regulations are in force as to the consumption of the drug, and its packing and sale are carried out officially in order that no person concerned may have an interest in extending the traffic.

In theory the consumption of opium is entirely forbidden in Java and Madura, Lombok, and other parts of the Dutch East Indies. In most parts, however, the possession of opium is permitted to holders of special licences, though in many districts such licences may not be issued to natives or other specified classes of persons. In a few towns such as Macassar and Padang, in most of Atjeh, Tapanuli, and Sumatra East Coast, and in the islands of Nias, Bali, and Sumbawa, consumption is entirely free and unrestricted. The price of opium has been raised in most of the provinces of the Dutch East Indies, with a view to diminishing its popularity. There has been a strong movement in Holland in favour of abolishing the opium traffic altogether, but it is urged that those already accustomed to the drug would merely seek alcohol or other substitutes if deprived of it. When on one occasion the Government forbade the importation of opium into Banka, 25,000 Chinese coolies employed in the tin mines struck work until the embargo was removed.

In 1914 the gross receipts from the monopoly were fls. 34,987,000, and the working expenses, together with police supervision on land and sea to prevent smuggling, amounted to fls. 8,987,000, so that the profits amounted to fls. 26,000,000.

Expenditure.—The ordinary expenditure had been increasing during the years preceding the war, as additional public enterprises were undertaken, and direct government introduced in many districts previously under native rule. The ordinary expenditure in 1907 amounted to fls. 168,000,000, in 1910 to fls. 213,000,000, and in 1913 to fls. 287,000,000, the total expenditure in these years being fls. 173,000,000, fls. 231,000,000, and fls. 327,000,000. respectively. The following table shows the distribution of the expenditure in 1913:

	Thousands of Florins.
General Administration	1,377
Justice	8,980
Finance	64,187
Internal Administration	34,553
Education, &c.	19,655
Agriculture, Industry, and Commerce	11,154
Public Works	36,959
Government Industries	86,498
War	40,252
Marine	18,201
Local and Provincial Administration	5,257

Taxation.—The most important direct taxes in the Dutch East Indies are the income tax, personal property tax, poll-tax, land-tax, trade tax, and verponding or ground tax. Of these the land-tax is the most profitable. The largest contribution to the revenue derived from direct taxation is made by Java and Madura.

The *income tax* has been steadily growing in importance, and in 1917 was estimated to produce fls. 18,200,000. It is imposed upon Europeans and those enjoying European rights, upon all private and public companies and trading associations, and upon all individuals trading or practising a profession.

The *personal property tax*, amounting to 5 per cent. on the rental value of a house and 2 per cent. on the value of the furniture, is imposed upon Europeans or persons enjoying European rights, and foreign Orientals. Horses, bicycles, carriages, and motor-cars are also taxed.

The *poll-tax*, a payment in lieu of personal service, has become more and more productive as statute labour has been gradually abolished in most parts of the Dutch East Indies. In 1917 it was estimated to produce fls. 9,320,000.

The *land-tax* is a term used to include not only the tax upon actual land in Java and Madura, but also such charges as the tithes levied on rice in South and East Borneo, Celebes, Bali, and Lombok, the tax on fish-ponds in Java, and taxes on the collection of birds' nests and guano in Celebes and Sumatra. Agricultural land in Java is assessed according to its value, the rate of tax varying from 25 cents to fls. 20 per *bouw.* Irrigated rice-fields or *sawahs* pay a tax ranging from 8 per cent. to 20 per cent. of the taxable produce, after a certain quantity of rice has been set aside.

The *trade tax* is imposed on natives only, and applies to all who do not pay land-tax. It now affects almost all earned incomes, except the salaries of persons in Government service or engaged in the teaching of religion. In the Outer Possessions, foreign Orientals are liable to this tax if they are under the direct rule of the Government.

The *verponding* or *ground tax* is imposed on real property, and amounts to 1 per cent. of the rental value, if the land is held by virtue of grants or assignments from the British Administration of 1811–16, or to ¾ per cent. of the rental value, if the ownership of the land was granted by the Dutch, either by Royal Decree in 1872 or otherwise. Various classes of land are exempt, including Crown property and land belonging to ecclesiastical, scientific, or charitable institutions.

Besides the general taxes applicable to the whole of the Dutch East Indies, there are various special taxes in certain territories. For example, in Celebes natives to whom the Government has lent fields free of charge pay the *tesang*, one-third of the crops produced. On January 1, 1914, a separate trade tax on incomes derived from a trade, handicraft, or industry was introduced in all territories except Java and Madura, to include persons not paying the ordinary trade tax, and to supplant the poll-tax and similar burdens.

Among indirect taxes, the excise duties are noteworthy. They are levied on matches, tobacco, petroleum, and colonial-made alcoholic liquors only. There is a duty peculiar to Borneo upon certain kinds of imported tobacco.

Farmed taxes now form only a small part of the revenue, as the Government aims at getting all taxation under its direct control. Both in Java and parts of the Outer Possessions, however, certain sources of revenue, such as tolls on bridges and ferries, and concessions to keep pawnshops or gambling dens, or to collect birds' nests, are still farmed out. The butchers' meat tax, on the slaughter of cattle, horses, and pigs, is levied in Java and in some of the Outer Possessions, and in certain districts of the latter is farmed out.

(2) *Currency*

The currency of the Dutch East Indies is that of Holland. There are special coinage and note issues for the Colony. No other coinage is permitted. The Javasche Bank issues notes for 5, 10, 25, 50, 200, 300, 500, and 1,000 florins.

(3) *Banking*

The chief bank in the Dutch East Indies is the *Javasche Bank*, which was established in 1828, is controlled by the Dutch Government, and has a capital of fls. 6,000,000. It had notes to the value of fls. 118,000,000 in circulation in March 1915. It is compelled by law to keep a metal reserve amounting to at least 40 per cent. of the value of the notes in circulation, plus unpaid short drafts and credit balances on current accounts. Three-fourths of this reserve must be deposited in the Colony, while one-half must be in the legal tender of the Dutch East Indies. The head office of the bank is at Batavia, and its branch offices in Java are at Semarang, Surabaya, Cheribon, Jokyakarta, Surakarta, and Bandung.

Of other banks in Java, ordinary banking business only is conducted by certain firms, such as the Nederlandsch-Indische Escompto Maatschappij, and the agencies of the Chartered Bank of India, Australia, and China, and the Hong Kong and Shanghai Banking Corporation. Others, such as the Nederlandsche Handelmaatschappij and the Nederlandsch-Indische Handelsbank, act also as agricultural credit banks. Others again are produce banks only.

The *Nederlandsche Handelmaatschappij* was founded in 1824. In 1913 the share capital, after several vicissitudes, was increased to fls. 75,000,000, of which fls. 55,000,000 had been taken up by 1916. The dividend declared for 1914 was 8 per cent. During the period of compulsory cultivation, 1830–59, the company was entrusted with the shipment and sale of Government produce, making financial advances to the Dutch East Indian Government and selling produce on consignment. In 1874 it took up banking business, and now carries on all kinds of financial transactions on a large scale. The head office is at Batavia, and there are 11 branch offices in Java. This company is known throughout the Dutch East Indies as ‘The Factory’. In 1914 it was financially interested in

37 sugar factories, of which 16 were entirely under its control. Its turnover on deposit and current accounts in the East in that year was fls. 1,668,000,000.

The *Nederlandsch-Indische Escompto Maatschappij* started business in 1858 with a fully paid-up capital of fls. 500,000. Its foreign bill transactions became important after 1901, when an independent agency was established in Amsterdam, and by the end of 1914 it had 9 agencies in the Dutch East Indies. The dividend paid in 1917 was 8¼ per cent. It carries on a commission business in the widest sense, and acts as cashier for other firms. It gives preference to transactions which do not bind down capital for any length of time. In January 1915 the reserve fund amounted to fls. 2,025,417.

The *Nederlandsch-Indische Handelsbank* was established in 1863 with a capital of fls. 1,500,000, and was originally an agricultural credit bank. The sugar crisis of 1884 nearly ruined it, and it saved itself only by reconstruction under a new name as the Nederlandsch-Indische Landbouw Maatschappij, of which practically all the shares are held by the bank. The bank itself has since flourished.

The *Unie Bank voor Nederland en Kolonien* was founded in 1914 with a nominal capital of fls. 5,000,000, of which fls. 1,000,000 had been issued and fully paid up by 1915. This company does miscellaneous business, administering private fortunes and taking part in syndicates and combines.

The *Nederlandsch-Indische Hypotheek Bank* was founded at Batavia in 1891, with a share capital of fls. 500,000, and the *Nederlandsch-Indische Effecten en Prolongatie Bank* in 1912, with a nominal capital of fls. 5,000,000, of which fls. 1,000,000 had been issued and fully paid up at the end of 1914. Both these banks were established to advance money on mortgages of real property situated in the Dutch East Indies.

The *Bank of Taiwan, Ltd.*, a Japanese concern, opened a branch at Surabaya in 1915, and another at Batavia on January 1, 1918. The *Mercantile Bank of India* and the *Banque de l'Indo-Chine* have established agencies in Java. The *American International Banking Corporation* opened a branch at Batavia in 1918.

Banks for Natives.—In order to encourage native industries and native agricultural enterprises, the Government has founded various credit institutions throughout the Colony. In 1914 the expense of their upkeep and supervision, including the subsidizing of the smaller banks wherever necessary, was fls. 1,296,174. At the head of this organization is now the *Centrale Kas* or Central Credit Bank, which was founded at Batavia in 1913 to supervise the minor credit banks. The Centrale Kas is incorporated, and is entrusted by the Government with special funds set aside to promote the people's welfare. It is managed by a civil servant, assisted by a board of supervision, whose members are nominated by the Governor-General. The staff is paid by the bank, and not by the Government.

At the end of 1914 the capital of the Centrale Kas was fls. 2,875,250, and the rate of interest to be paid for moneys lent by the Treasury was fixed for that year at 3·22 per cent. The Government now only makes subsidies direct to district banks for objects for which the Centrale Kas is not authorized to make advances, such as the importation of foreign cattle and the settling of Javanese colonists in the Outer Possessions. The institutions controlled by the Centrale Kas, in order of importance, are Provincial, Divisional, or District Banks, Village Credit Banks, and Village Rice Banks.

The *Provincial, Divisional,* or *District Banks* are not run as profit-making concerns. The Government subsidizes them whenever necessary. In Java they are usually limited in their operations to their political divisions or districts, but in the Outer Possessions their scope sometimes covers whole provinces. Many of them have branch offices. The directors, who may be either European or native, give their services gratis, and it is intended that eventually the boards shall be composed of depositors and borrowers. These banks finance productive undertakings, trading, fisheries, the redemption of land or crops from mortgages, and the erection of dwelling-houses. They lend money at 12 to 18 per cent. They pay 4 to 6 per cent. on deposits repayable at 3 to 12 months, and 3 to 4 per cent. on savings withdrawable at any time. All these Divisional Banks are trying to obtain substantial reserves as soon as possible, as they have no other capital.

The *Village Credit Banks* lend small sums to the natives at 24–30 per cent. per annum. This rate is not so exorbitant as it seems, because loans seldom exceed fls. 10. Some of these banks require the borrower to deposit a certain sum, apart from his loan and interest, which is only repayable with notice. The Village Credit Banks derive their funds from deposits by Rice Banks and village corporations, and can borrow from the Divisional Banks if necessary; they generally have current accounts with the Divisional Banks.

The *Village Rice Banks* are owned and managed entirely by single communities or groups of villages. Their object is to ensure supplies of seed to the natives, and to serve as a precaution against famine. They lend rice, to be refunded from the next harvest with 50 per cent. interest. The Government supplies rice to the banks, if necessary, free of interest, but generally requires a bank to pay off its debt with interest, and when the debt is paid off the bank is able to charge less than 50 per cent. to borrowers. Practically all the banks had been able to reduce their rate of interest before the war. The loans to the natives are always made and repaid in rice. A certain percentage of rice is sold each year to pay the expenses of administration and to form a monetary reserve. The fact that the native can always borrow rice from the bank protects him against the rapacity of dealers who, when making him an advance on his next harvest, would take advantage of his need to pay only low prices for his crop. The Rice Banks, however, are gradually giving place to Financial Credit Banks, as transport facilities increase and risks of famine diminish. If one district is short of rice, supplies can now as a rule readily be obtained from other areas. Also, with the development of fishing and other industries, the dependence of many areas upon the rice crop is itself diminishing.

In some parts of Java, where sea-fishing is the main source of livelihood of the natives, banks have been established in conjunction with co-operative fish-markets.

There is a *Post Office Savings Bank*, and in 1915 the depositors numbered 130,909, with fls. 10,711,595 to their credit. There are some private savings banks.

(4) *Influence of Foreign Capital; Principal Fields of Investment*

Before 1837, when the Government began to allow the free labour of the natives, exacting State monopolies obstructed all private enterprises in the Dutch East Indies. Capitalists in Holland had little external competition to meet until much later. Even now, as has been shown, concessions are granted to Dutch corporations only, though they may be transferred to foreigners. In 1884 the sugar crisis caused immense losses, but gradually the confidence of European financiers in the prospects of the Colony increased.

A large number of companies have been founded since 1907 to work estates in Java, Sumatra, and Borneo. Their collective capital exceeds £20,000,000, not more than one-fourth of which is Dutch.

The Javasche Bank in 1911 estimated the total capital invested in Java by foreign nationalities as about fls. 170,000,000 nominal, of which about fls. 150,000,000 was paid up. Of this total fls. 120,400,000 was British, fls. 20,700,000 French and Belgian, fls. 7,000,000 Chinese, and only fls. 1,200,000 German.

British capital in Java is chiefly invested in tea, cinchona, rubber, and sugar. One important British concern is the Anglo-Dutch Plantations of Java (London), with a capital of £1,500,000, of which £1,163,126 has been paid up. Through the Pamanukan en Tjiassemlanden Maatschappij, a Dutch company registered in the Dutch East Indies, this British firm controls the Pamanukan Estate of 500,000 acres, on which are cultivated tea, coffee, rubber, rice, cinchona, and timber. The Dutch company holds the titles, while the British company holds all the shares of the Dutch company, and in 1916 paid a dividend of 8 per cent. The total British investments in the Dutch East Indies were estimated at the end of 1917 to be about £20,000,000.

During the twentieth century much capital will probably be invested in areas in the Dutch East Indies which are as yet uncultivated and even unexplored. The Government has still by far the largest trading interest in the Colony. In 1916 the Government realized about fls. 14,000,000 from sales of produce in Europe, while receipts in the Colony amounted to fls. 34,042,300 from the opium monopoly, fls. 14,553,000 from the salt monopoly, fls. 7,059,000 from the sale of coal, and fls. 806,350 from the sale of coffee, besides large profits from railways and forests.

(E) GENERAL REMARKS

If British manufacturers are to take full advantage of opportunities for trade with Java after the war, certain changes both in the facilities provided for them and in their own methods are essential. It is imperative, for instance, that there should be a direct service of steamers between British ports and Java. Greater credit facilities should be given to British merchants wishing to establish themselves in the East, and British chambers of commerce should be founded in Java and elsewhere. A proposal has been made that a British commercial intelligence officer should be appointed for the Dutch East Indies, to reside in Java, visiting the Outer Possessions at frequent intervals, and devoting himself entirely to the collection and distribution of commercial information.

APPENDIX

TREATY BETWEEN GREAT BRITAIN AND THE NETHERLANDS RESPECTING TERRITORY AND COMMERCE IN THE EAST INDIES.

London, March 17, 1824. (See L. Hertslet, *A Complete Collection of Treaties*, &c., vol. iii, pp. 285–303.)

Art. I. The High Contracting Parties engage to admit the subjects of each other to trade with their respective possessions in the Eastern Archipelago, and on the continent of India, and in Ceylon, upon the footing of the most favoured nation; their respective subjects conforming themselves to the local regulations of each settlement.

II. The subjects and vessels of one nation shall not pay, upon importation or exportation, at the ports of the other in the Eastern Seas, any duty at a rate beyond the double of that at which the subjects and vessels of the nation to which the port belongs are charged.

The duties paid on exports or imports at a British port, on the continent of India, or in Ceylon, on Dutch bottoms, shall be arranged so as in no case to be charged at more than double the amount of the duties paid by British subjects, and on British bottoms.

In regard to any article upon which no duty is imposed, when imported or exported by the subjects or on the vessels of the nation to which the port belongs, the duty charged upon the subjects or vessels of the other shall in no case exceed 6 per cent.

III. The High Contracting Parties engage that no Treaty hereafter made by either with any native power in the Eastern Seas shall contain any Article tending, either expressly or by the imposition of unequal duties, to exclude the trade of the other party from the ports of such native power; and that if, in any Treaty now existing on either part, any Article to that effect has been admitted, such Article shall be abrogated upon the conclusion of the present Treaty.

It is understood that, before the conclusion of the present Treaty, communication has been made by each of the Contracting Parties to the other, of all Treaties or Engagements subsisting between each of them, respectively, and any native power in the Eastern Seas; and that the like communication shall be made of all such Treaties concluded by them respectively hereafter.

IV. Their Britannic and Netherland Majesties engage to give strict orders, as well to their Civil and Military Authorities as to their ships of war, to respect the freedom of trade, established by Articles I, II, and III; and in no case to impede a free communication of the natives in the Eastern Archipelago with the ports of the two Governments, respectively, or of the subjects of the two Governments with the ports belonging to native powers.

V. Their Britannic and Netherland Majesties, in like manner, engage to concur effectually in repressing piracy in those seas; they will not grant either asylum or protection to vessels engaged in piracy, and they will in no case permit the ships or merchandise captured by such vessels to be introduced, deposited, or sold, in any of their possessions.

VI. It is agreed that orders shall be given by the two Governments to their officers and agents in the East, not to form any new settlement on any of the islands in the Eastern seas without previous authority from their respective Governments in Europe.

VII. The Molucca islands, and especially Amboyna, Banda, Ternate, and their immediate dependencies, are excepted from the operation of Articles I, II, III, and IV, until the Netherland Government shall think fit to abandon the monopoly of spices; but, if the said Government shall, at any time previous to such abandonment of the monopoly, allow the subject of any power other than a native Asiatic power to carry on any commercial intercourse with the said islands, the subjects of His Britannic Majesty shall be admitted to such intercourse upon a footing precisely similar.

VIII. His Netherland Majesty cedes to His Britannic Majesty all His establishments on the continent of India, and renounces all privileges and exemptions enjoyed or claimed in virtue of those establishments.

IX. The factory of Fort Marlborough and all the English possessions on the island of Sumatra are hereby ceded to His Netherland Majesty; and His Britannic Majesty further engages that no British settlement shall be formed on that island, nor any Treaty concluded by British authority with any native Prince, Chief, or State therein.

X. The town and fort of Malacca and its dependencies are hereby ceded to His Britannic Majesty; and His Netherland Majesty engages for himself and his subjects never to form any establishment on any part of the Peninsula of Malacca, or to conclude any Treaty with any native Prince, Chief, or State therein.

XI. His Britannic Majesty withdraws the objections which have been made to the occupation of the island of Billiton and its dependencies by the agents of the Netherland Government.

XII. His Netherland Majesty withdraws the objections which have been made to the occupation of the island of Singapore by the subjects of His Britannic Majesty.

His Britannic Majesty, however, engages that no British establishment shall be made on the Carimon isles, or on the islands of Battam, Bintang, Lingin, or on any of the other islands south of the straits of Singapore, nor any Treaty concluded by British authority with the chiefs of those islands.

XIII. All the colonies, possessions, and establishments which are ceded by the preceding Articles shall be delivered up to the officers of the respective Sovereigns on the 1st of March, 1825. The fortifications shall remain in the state in which they shall be at the period of the notification of this Treaty in India; but no claim shall be made on either side for ordnance or stores of any description, either left or removed by the ceding Power, nor for any arrears of revenue, or any charge of administration whatever.

XIV. All the inhabitants of the territories hereby ceded shall enjoy for a period of 6 years from the date of the ratification of the present Treaty, the liberty of disposing, as they please, of their property, and of transporting themselves without let or hindrance to any country to which they may wish to remove.

XV. The High Contracting Parties agree that none of the territories or establishments mentioned in Articles VIII, IX, X, XI, and XII shall be at any time transferred to any other Power. In case of any of the said possessions being abandoned by one of the present Contracting Parties, the right of occupation thereof shall immediately pass to the other.

XVI. It is agreed that all accounts and reclamations arising out of the restoration of Java and other possessions to the officers of His Netherland Majesty in the East Indies, as well those which were the subject of a Convention made at Java on the 24th of June, 1817, between the Commissioners of the two nations, as all others, shall be finally and completely closed and satisfied on the payment of the sum £100,000, to be made in London, on the part of the Netherlands before the expiration of the year 1825.

. . . .

The British Plenipotentiaries understand the term Moluccas as applicable to that cluster of islands which has Celebes to the westward, New Guinea to the eastward, and Timor to the southward; but that these three islands are not comprehended in the exception; nor would it have included Ceram, if the situation of that island, in reference to the two principal spice isles, Amboyna and Banda, had not required a prohibition of intercourse with it so long as the monopoly of spices shall be maintained.

The territorial exchanges which have been thought expedient for avoiding a collision of interests render it incumbent upon the Plenipotentiaries of His Britannic Majesty to make and to require some explanations with respect to the dependents and Allies of England in the island from which she is about to withdraw.

A Treaty concluded in the year 1819 by British Agents with the King of Acheen is incompatible with the 3rd Article of the present Treaty. The British Plenipotentiaries therefore undertake that the Treaty with Acheen shall, as soon as possible, be modified into a simple arrangement for the hospitable reception of British vessels and subjects in the port of Acheen. But, as some of the provisions of that Treaty (which has been communicated to the Netherland Plenipotentiaries) will be conducive to the general interests of Europeans established in the Eastern Seas, they trust that the Netherland Government will take measures for securing the benefit of those provisions. And they express their confidence that no measures hostile to the King of Acheen will be adopted by the new possessor of Fort Marlborough.

It is no less the duty of the British Plenipotentiaries to recommend to the friendly and paternal protection of the

Netherland Government the interests of the natives and settlers subject to the ancient factory of England at Bencoolen.

This appeal is the more necessary because, so lately as the year 1818, Treaties were made with the native chiefs, by which their situation was much improved. The system of forced cultivation and delivery of pepper was abolished; encouragement was given to the cultivation of rice; the relations between the cultivating classes and the chiefs of the districts were adjusted; the property in the soil was recognized in those chiefs; and all interference in the detailed management of the interior was withdrawn, by removing the European residents from the out-stations and substituting in their room native officers. All these measures were calculated greatly to promote the interests of the native inhabitants.

In recommending these interests to the care of the Netherland Government, the undersigned request the Plenipotentiaries of His Netherland Majesty to assure their Government that a corresponding attention will be paid, on the part of the British Authorities, to the inhabitants of Malacca and the other Netherland settlements which are transferred to Great Britain.

AUTHORITIES

Historical

Berg, N. P. van den. *The Financial and Economical Condition of Netherlands India since 1870.* The Hague, 1895.

Berg, L. W. C. van den. *Le Hadramout et les colonies arabes dans l'archipel indien.* Batavia, 1886.

Campbell, D. M. *Java: past and present.* 2 vols. London, 1915.

Daendels, H. W. *Staat der Nederlandsche Oostindische Bezittingen ... in de Jaaren 1808–11.* 2 vols. The Hague, 1814.

Day, Clive. *Policy and Administration of the Dutch in Java.* New York, 1904.

Deventer, M. L. van. *Geschiedenis der Nederlanders op Java.* 2 vols. Haarlem, 1886–7.

Deventer, C. Th. van. *Overzicht van den economischen toestand der inlandsche bevolking van Java en Madoera.* The Hague, 1904.

Encyclopaedie van Nederlandsch-Indië. [1st ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895–1905.]

—— [2nd ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

Fokkens, F. *De nieuwe Regeling der grenzen tusschen Nederlandsch en Portugeesch Timor.* The Hague, 1914.

Greve, W. R. de. *Het Rapport van de Staatscommissie voor de verdediging van Nederlandsch-Indië.* The Hague, 1913.

Hansen, P. C. C. *Studiën en Beschouwingen. Bestuur van Oost-Indië.* 2 vols. Amsterdam, 1903.

—— *Zijn wij in staat Oost-Indië te verdedigen?* Amsterdam, 1904.

Heide, J. H. van der. *Economische Studiën en Critieken met betrekking tot Java.* The Hague and Batavia, 1901.

Huet, C. Busken. *Multatuli.* (In *Onze Hedendaagsche Letter-Kundigen.*) Amsterdam, 1885.

Jonge, J. K. J. de. *De opkomst van het Nederlandsch gezag in Oost-Indië*, 1595–1610. 13 vols. The Hague and Amsterdam, 1862–1909.

Junghuhn, W. Frans. *Java, deszelfs gedaante, bekleeding en inwendige structuur.* 4 vols. Amsterdam, 1850–3.

Kol, H. H. van. *Uit onze Koloniën.* Leiden, 1903.

Money, J. W. B. *Java, or how to manage a Colony.* 2 vols. London, 1861.

Multatuli, *pseud.* [i. e. E. D. Dekker]. *Max Havelaar.* 2 vols. Amsterdam, 1860.

—— *Max Havelaar.* Translated by Baron A. Nahuijs. Edinburgh, 1868.

—— *Nogeens Vrye-Arbeid in Nederlandsch-Indië.* Purmerende, 1882.

Pierson, N. G. *Koloniale Politiek.* Amsterdam, 1877.

Plas, J. *La Colonisation hollandaise aux Indes orientales.* Brussels, 1898.

Prince, P. M. L. de B. *Officieële Bescheiden betreffende den dienst van Multatuli als Oost-Indisch ambtenaar.* Jokyakarta, 1900.

Raffles, T. S. *The History of Java.* 2 vols. London, 1817.

Schuiling, R. *Nederland tusschen de Tropen.* Zwolle, 1889.

Snouck Hurgronje, C. *Nederland en de Islâm.* Leiden, 1915.

Stok, P. J. C. van der. *Gouvernements-Exploitatie in Nederlandsch-Indië.* The Hague, 1913.

Valentijn, F. *Oud en Nieuw Oost-Indien.* 3 vols. The Hague, 1856–8.

Veth, P. J. *Java.* 4 vols. Haarlem, 1895–1907.

Wallace, A. R. *The Malay Archipelago.* Vol. i. London, 1869.

Winckel, C. P. K. *Essai sur les principes régissant l'administration de la justice aux Indes orientales hollandaises.* Amsterdam and Semarang, 1880–1.

De eerste Schipvart der Nederlanders naar Oost-Indië onder Cornelis de Houtman, 1595–7. (Vol. vii of the publications of the Linschoten Vereeniging.) The Hague, 1915.

East and West Indian Mirror. An account of Joris van Speilbergen's Voyage round the World, 1614–17, and of the Australian Navigations of Jacob le Maire, 1615–17. (Publications of the Hakluyt Society, ser. ii, vol. 18.) London, 1906.

Eene waarschuwende stem tot allen die Indië voor Nederland wenschen te behouden. Verslag van het beheer, etc. Rotterdam, 1859.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Jaarcijfers voor het Koninkrijk der Nederlanden (*Koloniën*), 1912, 1913. The Hague, 1914, 1915.

Regeerings Almanak voor Nederlandsch-Indië. 2 vols. Batavia, 1916.

Verslag der Commissie tot uitzetting op het terrein van de tusschen het Nederlandsche gebied en Britisch Noord-Borneo vastgestelde grens. Batavia, 1913.

Verslag van het beheer en den staat der Nederlandsche Bezittingen en Koloniën in Oost- en West Indië en ter Kust van Guinea over 1849–[1916]. 61 vols. The Hague, 1857–1916.

Year Book of the Netherlands East Indies. Batavia, 1916.

ECONOMIC

British Diplomatic and Consular Reports, Annual Series. *Netherlands East Indies, Trade, &c.* No. 5083, 1912, and No. 5325, 1913.

Cotton Goods in the Dutch East Indies. (United States Department of Commerce, Special Agents' Series, No. 120.)

Encyclopaedie van Nederlandsch-Indië. [1st ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895–1905.]

—— [2nd ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

In- en Uitvoer, Handels-Economisch Weekblad voor Nederland en Kolonien. The Hague, 1876, &c.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Jaarcijfers voor het Koninkrijk der Nederlanden (Koloniën). Batavia, The Hague, 1915.

Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.

U.S.A. Supplement to Commerce Reports, 53A. 1915.

Verslag omtrent Handel, Nijverheid en Landbouw van Nederlandsch-Indië gedurende 1915. Batavia, 1916.

BROWN, J. MACMILLAN. *The Dutch East.* London, 1914.

CABATON, A. *Les Indes néerlandaïses.* Paris, 1910 (Translated as *Java, Sumatra, and the other islands of the Dutch East Indies.* London, 1911).

CAMPBELL, DONALD M. *Java: past and present.* London, 1915.

WALCOTT, A. S. *Java and her Neighbours.* New York and London, 1914.

WRIGHT, A. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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SUMATRA

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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Boundaries

Sumatra[1] lies between 5° 39′ north and 5° 57′ south latitude, so that the Equator divides it into two nearly equal parts. Its total area is 167,954 sq. miles, or 184,000 sq. miles including the adjacent islands. It is 1,060 miles in length, and 248 miles wide at its widest point. On the western side it borders on the Indian Ocean; it is separated from Java, to the south-east, by the Sunda Straits, and from the Malay Peninsula, to the north-east, by the Malacca Straits.

Sumatra forms an *indeeling* (division) of the Netherlands Indies, and is divided into two governments, Sumatra West Coast and Atjeh (Achin), and seven residencies, Tapanuli, Sumatra East Coast, Riouw and Dependencies, Jambi, Benkulen, Palembang, and the Lampong Districts.

(2) Surface, Coasts, and River System

Surface

Sumatra consists of a high mountain chain, running along the whole of the western coast, with a broad belt of flat alluvial country occupying the whole length of the island to the east. The mountain chain runs for a distance of over 1,000 miles, rising to numerous volcanic peaks from 5,000 to over 12,000 ft. high. The whole system, which is referred to as the Barisan Mountains or *Bukit Barisan*, consists in general of

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[1] An account of the islands off the coasts of Sumatra will be found on pp. 66–69, Section IV, Economics.

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[1] An account of the islands off the coasts of Sumatra will be found on pp. 66–69, Section IV, Economics.

Coasts

The west coast of Sumatra is in general high and rocky, particularly between 2° south latitude and Padang, where the mountains in places come right down to the sea. Between Mokko Mokko and Cape Vlakke Hoek the coast is on the whole bold and difficult of approach, but the mountains lie farther inland and the land near the shore is covered with alluvium and is frequently marshy. North of Padang the coastal marshes begin again, but between Tiku and Tapanuli Bay the alluvial land is broken by stretches of country on which various settlements have arisen. In this part of the coast the sea has eaten away the land in a series of semicircular bays. North of Tapanuli Bay, as far as Trumon (Taroemoen), is a wide alluvial plain, and from thence to Koningspunt the coast is only marshy in places, as at Melabuh (Meulaboh).

The sea is from 20 to 50 fathoms deep in most parts of the west coast close offshore, falling to great depths beyond the narrow coastal shelf. A chain of islands extends parallel to the coast at a distance of about 60 miles, between the parallels of 3° north and 3° 30′ south; they are for the most part unsurveyed, as is the larger part of the west coast of Sumatra itself.

The best harbours of Sumatra are in the central part of the west coast, where there are several inlets well protected from the sea by islands, e. g. Emmahaven, on Koninginne Bay; north of Tapanuli and south of Indrapura none of the indentations in the coast affords complete shelter from the south-west monsoon. The development of the west coast for trade and settlement is much hindered by the difficulty of access from the sea, owing to the coral reefs and the breaking surf, and by the lack of communications inland.

The whole of the east coast of Sumatra from Diamond Point to Varkenshoek is formed of morasses and sandbanks, breaking up into innumerable points and islands at the mouths of the rivers, so that it is often difficult to distinguish land from sea. The coast is constantly extending seawards, as it is chiefly made up of the sediment brought down by the rivers. This region is largely uninhabited.

The north coast of Sumatra, between Raja and Diamond Point, is very varied: in places the cliffs rise precipitously from the sea, and are crowned with dense vegetation; in other parts there are sandy beaches or cultivated and well-populated plains. The two chief harbours are Oleh Leh (Oelee Lheue) and Sabang (on Pulu Weh Island).

At the southern extremity of Sumatra there are two deep indentations, Lampong Bay and Keizers or Semangko Bay. Telok Betong, on Lampong Bay, has a good harbour, and deals with almost all the trade of the Lampong Districts.

River System

Owing to the position of the mountains in Sumatra, the rivers on the west coast are all short. In the south the rivers have small deltas, and north of Benkulen as far as 2° south latitude, and between Padang and Priaman, are marshes which hinder their discharge.

On the east coast of Sumatra the rivers running through the alluvial plains have wide drainage areas, and form the most important means of communication. The largest rivers on the east coast, beginning at the south, are the Musi, the Jambi, the Kwantan (Indragiri), the Kampar, the Siak, the Rokan (Rekan), the Panei (Pane, Panai), and the smaller Asahan, Serdang, and Deli rivers to the north of these. The most important are the Musi and the Jambi.

(3) CLIMATE

Temperature.—The climate of Sumatra is tropical, but the heat is tempered by the surrounding seas. The air is almost always damp on the coast, being driest in the morning, and the climate may be described in general as hot and moist. The temperature varies hardly at all with the time of year, the maximum being about 77° F. (25° C.) and the minimum 75° F. (23·8° C.), and there is also little daily change. The average temperature for the year is 76·6° F. (24·7° C.). The mountain climate differs considerably from that of the coasts, and on a fine day is delightful, since the sun is usually tempered by strong winds.

Winds.—The climate differs in the parts of the island which lie to the north and the south of the Equator, since the land affected by the Australian monsoon reaches to the Equator or a little to the north of it, and then passes into the sphere of the Asiatic monsoon. Thus southern Sumatra is under the influence of the north-west monsoon from November to March, and the south-east monsoon from May to October, whilst the north of the island has the north-east wind from December to March and the south-west wind from May to September. The monsoons, however, are nowhere uninterrupted, since the diurnal land and sea breezes cause great local variability.

Rainfall.—The true monsoon climate, with a dry and a wet season, is not found, only comparatively slight differences being observable corresponding to the different seasons. Sumatra has not only a wet climate, the rainfall seldom falling below 80 in. (about 200 cm.) a year at any of the stations, and rising to 185 in. (470 cm.), but the rain is spread over the whole year, though generally speaking the fall is less in June and July in the south of the island, and in January, February, and March towards the north. The wettest period, taking the whole island together, is from October to January, and the driest from March to September. Most rain falls on the west coast, owing largely to its proximity to the mountains. The fall at the west-coast stations varies from 101 to 195 in. (about 260 to 500 cm.) a year, and is almost double that of the east-coast stations (59 to 100 in.; 150 to 250 cm.). The wettest part of the whole island is the central part of the west coast, near the Equator, Pulu Tello having 195 in. (500 cm.) of rain a year. The driest part is in the north, owing to the predominance of the dry south-east winds.

(4) SANITARY CONDITIONS

Sumatra is specially noted for the severity and widespread nature of its malarial fevers, which attack Europeans and natives alike, Europeans being more liable to the rapid form, and natives to the chronic.

Bays and river-mouths are notoriously fever-haunted, but the high country is more healthy. North Sumatra is on the whole less subject to fever, but unseasonable weather often brings epidemics of malaria and beri-beri, which particularly attack new-comers. Pulu Weh Island is a very healthy spot, but the west-coast islands are extremely malarious and unhealthy, as also are the west coasts of Benkulen and Atjeh; Padang has a good record for a coastal town, probably owing to the fresh breeze which blows night and morning there.

Dysentery and beri-beri are also prevalent, particularly among the coolies working on the plantations and in the mines, among whom hook-worm disease (Ankylostomiasis) is also very common. Dysentery, beri-beri, and cholera all occasionally break out as epidemics, and cholera is always endemic. Judging by the recorded cases, typhus and small-pox are rare in Sumatra, and they have become even less common of late years; there are no figures available showing the incidence of plague and tuberculosis, but both diseases are widespread in the archipelago. There are 1,760 lepers. It is very difficult to make the natives pay attention to the rules of hygiene, and the laws of the Mohammedan religion as regards ceremonial washing, &c., are by no means strictly observed by the majority of the Sumatran natives. The general death-rate for Europeans in 1914 was 15 per thousand, malaria and typhoid accounting for more deaths than any other diseases.

(5) Race and Language

Race

Native Peoples.—The peoples of Sumatra are ethnographically complicated, and there is, speaking generally, a marked difference between those living on the coasts who have been for centuries in contact with foreigners, and the inland tribes, who are still little known. From time to time many Arabs, Chinese, Hindus, Klings, and Bengalis have settled on the Sumatran coast, and Hindu-Javanese colonies were established for trading purposes at an early date in Palembang and Jambi. The mixed races which have resulted from such settlements have reached a higher standard of civilization than the tribes of the interior.

The whole of the indigenous population had probably a common Malayo-Polynesian origin, but differences of habitat and economic conditions have caused the formation of many tribes, differing considerably from one another in appearance, customs, and language.

The two main ethnical groups in Sumatra are the Indonesians, representing the people of the island before the Malay invasion, and the Malays, an Asiatic race which invaded Sumatra at an early date, and swept thence over large parts of the archipelago. (The use of the term Malay in this wider sense must not be confused with its narrower use as the name of an east-coast Sumatran people.) There is, however, no great difference in physique between the Malays and Indonesians, and the peoples of Sumatra, with the exception of some of the most primitive tribes, approximate more or less closely to the Malay type.

The chief peoples of Sumatra are:

Achinese, in north Sumatra, divided into peoples of the coastal and of the highland districts; *Gayos* and *Alas*, in the mountain country of north Sumatra, between about 3° and 4° 30′ north latitude, related to the Bataks, but under Achinese influence; *Bataks*, in the country round Lake Toba, Tapanuli, and part of the East Coast Residency; *Malays*, in the East Coast Residency, Riouw-Lingga, and Palembang, a seafaring people; *Menangkabau Malays*, in the Padang Highlands, a remnant of the original Malay race, which has developed separately owing to its isolated position; *Lebongs*, in Lebong on the west coast; *Rejangs*, in Rejang to the west of Palembang; and *Lampongs*, in the Lampong Districts, who have a considerable admixture of Javanese blood.

Besides these more important groups, there are the small and savage peoples who live mostly on the east coast, and the inhabitants of the islands adjacent to Sumatra.

The most primitive tribes of Sumatra and the adjacent islands have in many places become Islamized in recent years, and they all take a pride in copying the manners and customs of the Malays when they are brought into contact with them. There are, however, several small tribes still living in their original primitive condition, particularly the Kubus in Jambi, the Sakais, Tapungs, and Akits in Sumatra East Coast, the Lubus in Mandailing, the Benua in the Riouw-Lingga Archipelago, the Orang darat or Orang gunong of Banka and Billiton, and the Orang laut. They are all despised by the Malays, and they are as much behind them in civilization as the Malays are behind Europeans; their religion consists, as a rule, of a superficial animism, and their language is some low form of Malay.

Non-Native Population.—The majority of the 9,610 Europeans in Sumatra live in Deli and Padang, and are occupied with the tobacco plantations. The proportion of Government officials is low, as in the rest of the Dutch East Indies, where there are 9,000 Europeans in Government employ, as compared with 14,000 in agriculture, trade, and the professions. The large class of adult male Europeans with no occupation is formed mostly of the half-castes, who rank as Europeans, but are usually not competent to do a white man's work, and consider manual labour beneath them. Of the pure Europeans, 92 per cent. are Dutch, but only 7 per cent. of these are born in Holland. There are a number of Germans in Deli, which is a young colony, and bears a more international character than most East Indian settlements.

There were in 1912 in Sumatra 223,153 Chinese, 4,145 Arabs, and 19,575 other non-native Orientals.

The Japanese in the archipelago are technically the equals of Europeans, and are looked up to by the natives, but they take no part in European society. They are largely shopkeepers.

The large number of Chinese in Sumatra are employed mostly in the tin-mines of Banka and Billiton and in the pepper-gardens of the Riouw-Lingga Archipelago, and on the Deli tobacco plantations, four-fifths of the Chinese in the island itself being settled in Sumatra East Coast. They consist largely of emigrants of the poorest class, who are attracted by the higher rate of payment obtaining in the East Indies. Apart from employment as coolies, the Chinese form a universal class of middlemen, and trade in the islands would be paralysed by their departure.

The Arabs, unlike the Chinese, are rapidly assimilated to native society, and when, as is usually the case, they marry native wives, their Semitic character is soon lost.

Language

A variety of languages and scripts are used by the different peoples; some are related to Malay, but many are Hindu in origin. Malay forms a *lingua franca* for traders and officials, since it is a simple and widely-used tongue; Dutch is only used by the Europeans among themselves. Menangkabau Malay, which is a second branch of the language, and probably the more ancient, is spoken in Sumatra West Coast and the adjoining country. The Achinese language, which is related to Malay, is divided into four dialects. The Bataks have many differing languages, and use a Hindu script. The Rejang script and language are Hindu in origin, but now include many Malay words, and the Menangkabau Malays, who formerly used a Hindu script, now employ the Arabic form of writing. The Lampong tongue has affinities with both Batak and Sundanese.

(6) POPULATION

Distribution

The total population of Sumatra in 1912 was only 5,751,583, a very small figure when compared with the large size of the island or with the crowded condition of Java.

The most thickly inhabited part of Sumatra is the region of the western mountains, and the scantiest population is found in the marshy wooded plains on the east. In 1912 the density of the population varied from 76 per square mile in Sumatra West Coast to about 11 per square mile in Jambi.

Towns

There were, in 1905, only 31 settlements in Sumatra itself having a population of over 1,000, and only seven of these had more than 5,000 inhabitants.

The largest towns are Padang (capital of Sumatra West Coast), population (1905) 47,607 ; Padang Sidimpuan (capital of Tapanuli Residency), 3,128 ; Siboga (Sibolga), 17,611 ; Benkulen (capital of Benkulen Residency), 7,721 ; Telok Betong (capital of Lampong

Districts), 3,759; Menggala, 8,976; Palembang (capital of Palembang Residency), 60,985; Sekaju, 3,040; Jambi (capital of Jambi Residency), 8,815; Medan (capital of Sumatra East Coast), 14,250; Kuta Raja (capital of Atjeh Government), 3,704; Tanjungpinang (capital of Riouw Residency), 4,088.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

1596. First visited by Dutch.
1599. Cornelis Houtman murdered off Atjeh.
1662. Dutch conclude trade treaty with Palembang.
1664. Important extension of East India Company's trade.
1685. English set up an establishment at Benkulen.
1781. All Dutch possessions on the west coast captured by England.
1783. Restored by Treaty of Versailles.
1795. All Dutch possessions again captured by England.
1814. Again restored by Treaty of London.
1818. Raffles Governor of Benkulen.
1824. England retires from Sumatra.
1825. Sultanate of Palembang abolished.
1837. Conquest of Bonjol; overthrow of Padris.
1838. Conquest of the Thirteen Kutas.
1839. Barus invested by the Dutch.
1840. Tapus and Singkel taken from Atjeh.
1871. England withdraws objection to action against Atjeh.
1873. Holland declares war on Atjeh.
1878. Atjeh formally incorporated under Dutch rule.
1899. Padang Highlands definitely annexed.
1907. End of the Atjeh war.

(1) DUTCH SETTLEMENTS

SUMATRA, the island known to Marco Polo in 1295 as Java Minor, was first visited by the Dutch in 1596. They found the following states existent there: Atjeh (Achin) in the north; Siak, Kampar, Kwantan, and Indragiri in the north-east; Menangkabau in the centre; Indrapura, south of Menangkabau, on the west coast; Jambi and Palembang, in a south-easterly direction from Indrapura, both colonized by

Javanese in the fourteenth century and acknowledging the nominal supremacy of the Sultan of Bantam. All these states already professed Islamism, introduced in the twelfth century.

In 1599 Cornelis Houtman was treacherously murdered off the coast of Atjeh by natives at the instigation of the Portuguese, and for a long time the west coast proved very unfriendly; but in Palembang the Dutch East India Company was more successful, establishing a factory there and concluding a trade treaty in 1662. At first the trade was principally in pepper, but later also in tin from Banka. In 1663 the Sultan of Menangkabau sought Dutch support against Atjeh; a treaty followed in 1664, after which the Company was in a position to trade from Singkel to Indrapura, whilst a fortified factory was established at Padang. Forts speedily followed at Barus, Ayer Bangis, and Priaman on the west, in the Lampong Districts in the south, and at Muara Kompeh on the east. The English East India Company soon followed its Dutch rival in Sumatra, and at Benkulen, where a footing had been obtained in 1685, Fort Marlborough and several factories were already in existence by 1714.

(2) British Policy

During the fourth naval war with England (1781–3) the Dutch lost all their possessions on the west coast, but recovered them by the Treaty of Versailles in 1783. All they held in Sumatra was again lost when Holland was incorporated with France, but was again restored by the Treaty of London, August 13, 1814.

Sir Stamford Raffles, Governor of Java from 1811 to 1816 and of Benkulen from 1818 to 1823, endeavoured during the latter period to substitute British for Dutch influence in the whole of the East Indies. The alliances he made with the rulers and tribes of central Sumatra and the extension of the sphere of British influence throughout the island would have created a great colony in the immediate vicinity of Java, the hub of Holland's Indian empire. But Raffles's policy was not supported by the British Government. Dutch diplomacy succeeded in concluding a treaty in 1824, by which the English, who had held Benkulen for 150 years, ceded it to Holland and pledged themselves not to allow any British factory to be established in Sumatra, nor any treaty to be made under British authority with any of its states or rulers.

(3) CONSOLIDATION OF DUTCH RULE

This brought the whole of the coast, with the exception of Atjeh, exclusively under Dutch influence. To maintain and extend this, operations had already been commenced in Palembang in 1817, and ended with the abolition of the Sultanate in 1825; from 1819 there was for many years a struggle with a dangerous Mohammedan sect named Padris, who remained formidable until the conquest of Bonjol in 1837. Their hands now freed, the Dutch turned their attention to the subjection of other inland districts, and that known as the Thirteen Kutas was conquered in 1838. In 1839 Barus was occupied, and in 1840 Tapus and Singkel.

In a note accompanying the Treaty of 1824 the Dutch Government had promised to apply itself without delay to the regulation of its relations with Atjeh, in order to ensure security for trade and shipping, and in this note had also been included an undertaking that Holland would not enter into hostilities with Atjeh. But a long series of unfriendly acts on the part of the Achinese followed. The British Government, which had already had to warn the merchants of Penang and Singapore of the insecurity of Achinese waters, at length by a treaty concluded in 1871[1] desisted 'from all objections against the extension of the Netherlands dominion in any part of the Island of Sumatra', in return for trade concessions in Siak.

The Achinese, fearing Dutch aggression, secretly sought protection from the United States, Italy, France, and Turkey, through the consuls at Singapore. The Dutch demanded an explanation of these secret negotiations; and, this being evaded, war was declared on the Achinese in March 1873, and dragged on in one form or another, with heavy cost of blood and treasure, until December 1907, when the Sultan surrendered and was deported to Amboina. In 1878 the state of Atjeh and its dependencies had been incorporated as a government division of Sumatra. The rich, highland country inland from Padang now called the Padang Highlands remained under the rule of native sovereigns till 1899, when these last remnants of the great empire of Menangkabau were formally annexed by the Dutch.

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[1] Hertslet, *A Complete Collection of Treaties, &c.*, vol. xiii, pp. 665, 666.

III. SOCIAL AND POLITICAL CONDITIONS

(1) Religious

Nominally the peoples of Sumatra are nearly all Mohammedans, except a large proportion of the Bataks, and the bulk of the inhabitants of the islands off the west coast, who are pagans. Actually there is very little Mohammedan zeal or orthodoxy. Christianity has made little progress. At the end of 1914 the Protestant missionaries claimed that their congregations throughout the Outer Possessions had a membership of 538,000, and the Roman Catholic congregations were estimated at 40,000.

(2) Political

The Dutch Government includes Sumatra in the 'Outer Possessions' of the Indies, Java and Madura forming the more important division of the Possessions.

There are still large areas in the interior of Sumatra in which Dutch rule is merely nominal. It is necessary to maintain garrisons at a number of strategic points; but outbreaks among the natives have rarely occurred in recent years. Atjeh and Sumatra West Coast are still administered by governors. There is an army of occupation in Atjeh, and a small military force in Sumatra West Coast. In Deli, Siak, Jambi, and Palembang the native Sultans have become protected rulers. The Lampong Districts, Benkulen, and Tapanuli are directly administered by the Dutch. Now that the country is pacified, it may be expected that the population will rapidly increase, and the fertility of its soil will encourage immigration from Java.

(3) EDUCATIONAL

Education of the natives in the Outer Possessions, like that of the Europeans, is divided into public and private. Public education is conducted by religious societies and institutions and by private persons, and is both secular and religious. Schools founded by the numerous missionary societies, which are active throughout the archipelago, have always a religious basis; some of these are Mohammedan.

There are two classes of schools founded by the Government: (*a*) Dutch-native schools, which are primarily intended for the children of native chiefs and other important or wealthy natives; (*b*) secondary schools, originally intended for the instruction of native children in general, but now, owing to the increasing establishment of national schools (which are founded by the people, under Government supervision and, if necessary, with the support of the Government), restricted to the places where more advanced instruction is required.

There are also special Government schools in Deli, Asahan, Langkat, Serdang, Menado, Tondano, Amurang, Amboina, Saparua, and Sambas, which correspond to the Dutch-native schools to a certain extent, having partly European staffs, but are intended to meet the peculiar requirements of certain districts. The special school at Amboina is intended for the children of the Amboina burgers, and the rest for native children, preferably from the well-to-do class. Some are to a limited degree available for children of Europeans and foreign Orientals. At Kuta Raja (Atjeh) and Macassar (Celebes) there are special schools for the children of Christian soldiers from Amboina, Ternate, Timor, and Menado.

The native staffs for the Government schools in the Outer Possessions are trained at the Government colleges at Fort de Kock, Amboina, and Macassar. Normal courses of instruction for assistant teachers are provided at Kuta Raja, Palembang, Macassar, Banjermasin, Kendangan (south and east Borneo), and Singaraja (Bali).

Instruction in the Dutch-native schools of the first grade includes reading and writing in Dutch and Malay (the latter both in Arabic and Latin characters), and in the local language, arithmetic, geography of the Dutch East Indies, drawing, and elementary natural science. Many of these schools prepare pupils for the Minor Officials Examination. The secondary schools have a much simpler curriculum, including as a minimum the reading and writing of the local language, unless it is unsuitable for education, or the Malay language, while Dutch can be added. Arithmetic, without fractions, is also taught.

It was only in 1912 that a beginning was made with the introduction of national education, when 111 national schools were established in Sumatra West Coast, and 67 in Benkulen, of the type existing in Java. There were already in these two Residencies a number of institutions for elementary education conducted by administrative officials or native communities. These schools were in 1913 incorporated in the organization of national education, which brought up the number of national schools in Sumatra West Coast to 302 and the total in Benkulen to 83. By the end of 1914 there were 681 national schools in Sumatra. For most of these schools one instructor is sufficient, as they have only three classes, corresponding to the three lower classes in the secondary schools, and the daily lessons have a duration of two and a half hours for each class. Teachers are recruited from natives who have satisfactorily passed through a public secondary native school and have then received a year's theoretical and practical instruction from the head of a secondary school and are certified capable by him or have obtained a teaching diploma. There are 8 school inspectors in Sumatra West Coast, 3 in

Benkulen, 4 in Palembang, 2 in the Lampong Districts, and one each in Jambi and Riouw and Dependencies.

The number of pupils in 621 national schools in Sumatra at the end of 1914 (excluding those in the Lampong Districts and Atjeh) was 37,838 boys and 3,420 girls.

There were, in 1913, 149 National Schools with 7,240 pupils in the Government of Atjeh and Dependencies; and these schools were made available for the spreading of a better knowledge of agriculture, the teachers undergoing a special course of instruction.

Private schools founded by natives or by missionaries in the Outer Possessions obtain subsidies from the Government if they fulfil certain conditions. The schools and pupils of the Outer Possessions were tabulated in 1913 thus:

	National Schools.	*Pupils.*	*Private Schools.*	*Pupils.*
Sumatra West Coast .	49	13,160	17	1,398
Tapanuli	24	5,547	611	46,376
Benkulen	19	3,545	1	73
Lampong Districts .	9	1,914	5	190
Palembang	32	5,836	1	142
Jambi	7	740	25	3,774
Sumatra East Coast .	21	3,456	166	12,510
Atjeh	19	2,866	4	568
Riouw	5	595	9	503
Banka	6	980	1	54
Billiton	2	335	—	—
Total for Sumatra .	193	38,974	840	65,588
West Borneo . . .	6	709	7	442
South and East Borneo	20	4,717	92	5,743
Celebes	22	3,452	50	3,946
Menado	117	23,637	403	32,112
Ternate	2	535	139	4,915
Amboina	65	10,592	161	7,958
Timor	21	2,704	136	7,551
Bali and Lombok .	14	2,382	5	307
Total for whole of Outer Possessions	460	87,702	1,833	128,562

There were, therefore, at the end of 1913 in the Outer Possessions 2,293 schools for natives of all kinds, with a total attendance of 216,264.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) INTERNAL

(*a*) *Roads*

THE development of Sumatra has been greatly hampered by the scarcity of good roads. There is no connexion by road from end to end of the island as in Java. The pacification of Atjeh would probably have been effected many years ago if better roads had been available in the north of Sumatra. In the mountain districts in the centre of the island there are sometimes only forest tracks.

A road has recently been completed from Medan to the port of Belawan-Deli. Its last section, from Labuan-Deli to Belawan, though only 4 km. in length, cost fls. 325,000, owing to the number of bridges required. At the end of 1914, fifteen large works of construction were in progress, and a number of smaller. The total cost was estimated at about fls. 12,000,000, of which fls. 7,000,000 had already been spent in about five years. In 1915 there existed 3,500 km. of main roads, of which about 2,700 km. were metalled, and 6,700 km. of by-roads, of which about 900 km. were metalled. Another 970 km. of roads were in course of construction, or about to be begun.

The Government has established automobile services for the conveyance of travellers, mails, and goods. In 1907 a joint river and motor-car service from Palembang to Benkulen was initiated. The motor-cars connect at Penangiran with the stern-wheel steamers of the Koninklijke Paketvaart Maatschappij, which ply along the Lematang and Musi to Palembang. The cars were originally intended for Government officials only, but are now available for private persons, at a fixed tariff. A new West Coast service has also been established, starting from Padang. In the year 1915 the Palembang–Benkulen service carried 24,822 passengers, while the West Coast service carried 40,267 passengers between May and December. The mileage of the former service for 1915 was about 290,000, and of the latter service (May–December) about 110,000.

Statute labour for making and mending the roads can be demanded by the Government in all directly administered areas, but some of the main highways which are now being made pass through districts so sparsely populated that no use can be made of statute labourers, who must not be required to work more than a limited distance from their homes. Moreover, the making of roads in the mountains is so difficult that skilled labour is often essential.

(*b*) *Rivers*

The mountains of Sumatra are much nearer the west coast than the east, with the result that the rivers on the west are short; they are for the most part unnavigable, and the largest, the Singkel, is almost useless for shipping owing to the bar at its mouth, though farther up it forms an excellent means of communication in spite of the rapids in its course. The deep waters of the Indian Ocean would more readily absorb the alluvial accumulations of the rivers on the west, were it not that a row of islands extends for several hundred miles opposite the west coast of Sumatra, at an average distance of about 60 miles from the shore.

On the east many of the rivers flow across wide plains after leaving the mountains, and are rapidly silting up the coast. Tradition states that Palembang, now 55 miles inland, was once a seaport. The *Musi* (*Palembang*) river divides into a number of channels dispersed amid a vast unhealthy swamp covering an area of some 4,600 square miles. It is navigable by steamers for more than 200 miles, and by small boats for 335 miles. Palembang is the only inland town which has important river-traffic. At present the best route across the island to Benkulen from Palembang is by steamer up the Musi and its tributary the *Lematang*, and thence by motor-car. The *Jambi* river is the longest in the island, and opposite the town of Jambi it is 1,300 ft. wide, with a depth at low water of about 16 ft. It is navigable by small boats for about 500 miles, but its lower reaches are much more obstructed than those of the Musi. The *Asahan* river, which drains the Lake of Toba, and the *Serdang* and *Deli* rivers, are navigable by small vessels only. The *Kwantan* (*Indragiri*) is navigable as far as Tjenako, where the *Tjenako* river enters; between this point and Rengat there is very little water during part of the year. All the rivers on the east coast are impeded by mud-banks at their mouths, and the depth of the water constantly changes, on account of small bores (*benas*) which rush up their courses at intervals, at the time of the new and full moon.

The Government has supplied military engineers and provided the necessary explosives for deepening operations and the removal of obstructions from the beds of the Musi, Ketahun, Kwantan, and other rivers, but the results have been disappointing.

(*c*) *Railways*

In the west of Sumatra there is a State railway of 1·067 metre gauge, connecting Emmahaven with Fort de Kock (245 km.). In 1914 it carried 3,001,079 passengers and 639,694 tons of goods. Its construction, including harbours and coal-sheds, cost fls. 23,869,760, and the net revenue after payment of working expenses was fls. 1,016,379. This system has its head-quarters at Padang.

In the south of the island there are 12 km. of State railway, of 1·067 metre gauge. There was also in 1915 a line in course of construction connecting Telok Betong with Muara Enim and Palembang, the terminus being at Oosthaven, a few miles south of Telok Betong, and opposite Merak in Java, with which it is connected by a ferry. This line was constructed with great difficulty, owing to the fact that it ran through a sparsely populated district, where labour was scanty and the natives disliked the work. The Government decided to construct the line itself, being assured that if private concessions were granted attention would be paid to those stretches only which could be laid easily and would be at once remunerative.

In Atjeh and Dependencies there is a narrow-gauge steam-tramway 471 km. in length from Langsar to Kuta Raja and Oleh Leh (Oelee Lheue); the gauge is 0·75 metre, whereas the narrow gauge in Java is 0·60 metre. The Atjeh Steam Tramway, as this line is called, was constructed originally for strategical purposes, but was handed over by the Department of War to the Department of Government Enterprises in January 1916. In 1913 it carried 2,627,000 passengers and 209,000 tons of goods; of these 190,000 passengers and 19,000 tons of goods were carried on Government account.

On the east coast of Sumatra the Deli Railway Company controls a railway from Tebing Tinggi to Pangkalan-Brandan *via* Medan, with branches to Timbang-Langkat, Belawan, Labuan-Deli, and Kwala (Koealo). To this company was transferred in 1883 a concession granted to the Deli Maatschappij, valid till

1973. The line is being extended eastwards to Tanjung Balai, and westwards will eventually be connected with the Atjeh line. The Deli Railway Company also controls about 170 km. of tram-lines, and a concession was granted in 1913 for 150 km. of additional lines. The company's capital is fls. 4,000,000, and in 1914 it paid a dividend of 15 per cent. Its 92 km. of railway track in 1914 carried 1,746,364 passengers and 397,994 tons of goods. The capital outlay on this railway then amounted to fls. 9,019,131, and the net revenue, after payment of working expenses, was fls. 1,206,302. It had become necessary to double the track from Medan to Belawan, owing to the increase of traffic, and altogether about 124 km. of railway or tramway were in course of construction.

The Ombilin coal-mines, already connected with Emmahaven by railway, will before long be connected with Palembang and the east coast. Elaborate plans have been prepared for the railway development of central Sumatra, and in a few years there will be railway communications from end to end of the island.

(*d*) *Posts, Telegraphs, and Telephones*

In 1914 there were 175 post offices in Sumatra. Where no railway is available, the mails are conveyed, whenever possible, by motor-car, but there are considerable difficulties, for the cars have often to cross the rivers on rafts for want of bridges. Postmen also travel on horseback or by *prau*. Wherever there is a railway or tramway, the postal services run in connexion with it. In order to facilitate the delivery of mails from Europe, a sea post office travels between Batavia and Padang. There are auxiliary post offices on many of the boats of the Koninklijke Paketvaart Maatschappij.

In 1914 there were 4,972 km. of surface telegraph lines in Sumatra. The principal towns are in telegraphic communication with each other, though the difficulty of maintaining the telegraph wires has been very great. There are more wild animals than in Java, and much damage is done to the wires by monkeys and elephants. The railways and roads now in course of construction will assist the development of telegraphic communication throughout the island.

The telephone system in the Outer Possessions is very little developed, but there are extensive local exchanges at Padang and in Sumatra East Coast. As in most parts of the Outer Possessions, there are telephone systems for military and administrative purposes, which to a limited extent are available for public use.

(2) External

(*a*) *Ports*

(i) *Accommodation*

Belawan-Deli lies on the north-east of the island, and is connected by railway with Labuan and Medan. The channel is buoyed. The river Deli affords good anchorage in from 3 to 7 fathoms. The depth on the bar, which is six miles from the piers, is 16½ ft. at high water at ordinary springs and 14 ft. at ordinary neaps. The rise and fall of the tide is 8 ft. at ordinary springs and 3 ft. at ordinary neaps. The depth of water is less from October to March, during the north-east monsoon.

The Government is building two piers in the southern part of the harbour, and the Eastern Steamship Company one in the northern part. There are five piers at the port, belonging to the Government, the Ocean Steamship Company, the Koninklijke Paketvaart Maatschappij, the Norddeutscher Lloyd, and the Deli Railway Company, and at all of these, except at the end of the pier belonging to the Koninklijke Paketvaart Maatschappij, there is not less than 12 ft. at low water at ordinary springs and about 20 ft. at high water. Dredging was still in progress in December 1913, and Government shed accommodation was being provided. The Government dredger *Java* reported an additional depth of 4 ft. in the channel at the bar as a result of the operations of 1913, the cost of the year's work being about fls. 240,000. It was hoped to increase the depth ultimately to 25 ft. Additional wharfage was estimated to cost fls. 408,000. It was intended to purchase a floating crane at a cost of fls. 84,000. The aim was to make Belawan an ocean harbour, the cost being estimated at fls. 2,040,000.

Benkulen, on the south-west coast, was formerly of great importance, and a century ago was regarded as likely to become the principal port in the Dutch East Indies. It is now of little account, and the harbour has to a great extent silted up.

Padang (*Emmahaven*) is the most important harbour of the west coast, and is the shipping port for the produce of the Ombilin coal-mines. There are four piers, besides a coaling pier, three being 278 ft. long and one 170 ft. long. At low water vessels drawing 26 ft. can moor. The maximum draught allowed is 28 ft. Bunkering is done at the rate of 100 tons per hour. Pilotage is compulsory. The cost of improvements now in progress is estimated at fls. 885,000, of which fls. 136,514 were spent in 1913 and 1914.

Pangkalan-Brandan has a pier about 322 ft. long, with a depth alongside of 16 ft. at high water and 8 ft. at low water. The Bataafsche Petroleum Maatschappij has also a few wooden piers, with a total length of about 1,300 ft. There is a good anchoring place, and the Balbalan river channel is lighted at night by gas buoys. In 1907 a channel was made about 120 ft. broad, the lowest water in January, February, and March being 12½ ft. at low-water springs, and in the other months 13½ ft. The greatest depth of the high-water springs, viz. 21 ft. 6 in., occurs in May and June.

Sabang, on the island of Pulu Weh, off the north coast of Sumatra, is principally a coaling station, but in 1914 held the first place among the ports of the Dutch East Indies for total volume of traffic. The clear entrance to the harbour is about 2,460 ft. wide, and may be safely entered by day and night without the aid of a pilot. The anchorage is safe, with a bottom of sand and coral in 15 to 22 fathoms, to within about 328 ft. of the shore. The coal wharf is the property of the Sabang Bay Harbour and Coal Company.

Steamers go alongside the wharf in smooth water, and at lowest spring tides there is a depth of 30 ft. Coaling can continue day and night at an average rate of 100 tons per hour, and cargoes of coal can be discharged at the rate of 2,000 to 2,500 tons daily. The total length of the coaling transport and liquid fuel wharves is 3,000 ft. Repairs to steamers and boilers can be executed in the workshop attached to the 3,000-tons floating dry dock. This workshop is specially equipped for building dredgers, lighters, &c., and for electric welding.

There are five electrically driven coal transporters, and also one automatic bunkering barge (900 tons), and a 30-ton floating motor crane. Salvage accommodation is provided. The coal sheds have a capacity of 75,000 tons. There are godowns for the storage of tobacco and other merchandise, covering 62,000 square feet. The freshwater supply is abundant. To improve the harbour, fls. 91,000 were spent in 1910, fls. 52,000 in 1912, and fls. 252,683 in 1913.

Singkel is fortunately placed on an island in the delta of the Simpang river. The outlets of the river have bars, but the roadstead is good, and dredging has lately improved the principal entrance.

Ports of minor value are *Siboga* (*Sibolga*), *Telok Betong*, *Priaman*, *Bengkalis*, *Oleh Leh* (the port of Kuta Raja), *Natal*, and *Ayer Bangis*. They are all small places. Besides Padang, Palembang, and Belawan, the only ports in Sumatra open to ships of all nations for import and export trade are Oleh Leh and Telok Betong.

(ii) *Nature and Volume of Trade*

The following table shows the number of vessels entering and clearing at the three principal ports of Sumatra in 1913 and 1914, and their tonnage:

	1913.		1914.	
	No.	*Tonnage.*	*No.*	*Tonnage.*
Sabang . . .	1,184	6,006,000	1,011	5,028,000
Belawan-Deli . .	1,395	1,037,000	1,261	1,103,000
Padang (Emmahaven)	876	3,025,000	853	3,068,000

There is constant steamer communication between Belawan-Deli and Singapore and Penang. The following is a return of vessels entering the port in 1913:

Steam Vessels.

	Number.	*Tonnage.*
British . . .	171	146,845
Dutch . . .	216	321,508
German . . .	180	191,486

Sailing Vessels.

	Number.	*Tonnage.*
British . . .	193	37,442

(*b*) *Shipping Lines*

Vessels of the Koninklijke Paketvaart Maatschappij maintain regular services between the principal ports of Sumatra and the adjacent islands on the one hand, and the ports of Java and the rest of the Dutch East Indies and Singapore on the other. With some of the smaller ports, such as Siboga, Natal, and Barus, the company has instituted a weekly service; at others, such as Kroë in Benkulen Residency, its vessels call regularly once a fortnight.

The Rotterdamsche Lloyd and the Nederland Stoomvaart Maatschappij transport tin from Banka under contract.

Other steamship companies which have interests in these waters are the Norddeutscher Lloyd and the Ocean Steamship Company.

(c) *Cable and Wireless Communication*

Java and Sumatra have been connected by cable since 1859. The eruption of Krakatau in 1883 destroyed a cable laid between Anjer in Java and Telok Betong. In 1894 a cable, still in use, was laid between Anjer and Kalianda. In 1914 a direct cable (600 miles) was laid from Padang to Batavia.

There is a wireless station at Sabang, which, it is said, can perceive signals from the wireless station at Nauen, near Berlin. A wireless station has also been erected on Engano, which has assisted the development of that island. It is proposed to set up other wireless installations in Sumatra, as they are less costly than cables.

(B) INDUSTRY

(1) LABOUR

(a) *Supply of Labour*

The chief obstacle to the development of Sumatra is the dearth of labour. The local supply is supplemented to a great extent by imported labour. Of the native races the most important for economic purposes are the Bataks, Achinese, Gayos, and Menangkabau Malays.

The Bataks (about 250,000) appear to be one of the most promising races in the islands, though until recently they have vigorously resisted all foreign influences. They prefer the highlands, but many have been induced to work on the coasts as coolies and shopkeepers, and have developed inland trade. They show intelligence and adaptability; they do admirable work in wood, copper, and ivory.

The Achinese (about 800,000) have probably a considerable latent capacity for industry, but are a vicious, thriftless race. The highland Achinese (*Orang baroh*) have been described as fanatical brigands, and those on the coast (*Orang turong*) as servile, thievish, treacherous, and intemperate. Silk-weaving is a considerable industry among them, but craftsmanship in Atjeh has suffered from the effects of the long war.

The Gayos (about 60,000), a highland race akin to the Bataks, have long been under Achinese domination. They are industrious and peace-loving, though forced by the Achinese into opposing the Dutch. Besides being excellent workers in wood, copper, and ivory, they weave fine material, plait elaborate mats, and make good pottery.

The Menangkabau Malays in the Padang highlands are the most civilized of the natives; they learn very quickly where they have the opportunity, and are excellent traders and agriculturists. They are inclined to be servile to their superiors and arrogant to their inferiors, and are generally dishonest, but nowhere in Sumatra do the agricultural conditions more nearly resemble those of the most prosperous areas in Java than among these people.

In the Ombilin coal-mines the labourers are chiefly native convicts. At the end of 1914 the total number of labourers was 6,939, of whom 3,223 were actually convicts, while a large proportion of the remainder were ex-convicts, who, having learnt to be useful, contracted to continue their labour.

Among the imported labourers the Chinese form the most considerable element. They have practically all the domestic trade in their hands, and provide the skilled labour class. They are principally engaged in the Deli tobacco plantations, the tin-mines of Banka and Billiton, the timber-felling industries of Sumatra and Riouw, and the pepper gardens of Riouw and Banka. One German firm used to bring to the tobacco plantations every year 25,000 Chinese, a large proportion of whom returned to China at the expiration of their three years' contract. The majority of the Chinese in Sumatra, however, were born there, but these are not so strong physically nor so industrious as the immigrant Chinese. It is probable that the reason why the planting of tobacco is attended with better results in Sumatra than in Java is that the Chinese from Amoy and Swatow who do the work there are more intelligent than the Malay coolies employed in Java. The Chinese coolies employed in the tin-mines come from the dregs of the population of Amoy and Canton.

An increasing number of Javanese labourers emigrate to Sumatra on contract to work there. In 1909 there were about 45,000 of such labourers at work in Sumatra East Coast. The reluctance of the natives to do railway work led to the organization in Java of a special emigration service to supply labourers for work on the railways under construction in southern Sumatra. In 1914, for the Palembang section of the line, there were imported 2,901 coolies, and for the Telok Betong section, 5,716 coolies. The fact that the total number of hands employed at the end of the year on the Palembang section was 5,096, and on the Telok Betong 4,113, seems to indicate that in the former the natives had been induced to take some part in the work; in the latter, however, the natives of the Lampong Districts would take no part.

(*b*) *Labour Conditions*

The relations between employers and employees are governed by Coolie Ordinances, or, in the case of agreements not made under those Ordinances, by special laws. In Sumatra, as elsewhere in the Outer Possessions, no agreement may be made under the Coolie Ordinances with labourers who belong to the province in which the estate of the employer is situated. Included among these are the descendants of Orientals born and brought up in that province.

Contracts under the Coolie Ordinances are made for a period of three consecutive years or less, and must be drawn up in a prescribed form. Oppression is prevented by the rights and obligations of both parties being detailed. The number of working hours may not exceed ten a day, and when the contracts expire, or earlier if the labourers are unable to perform their duties, the employers are compelled to send them back to the place where they were recruited. The majority of the employers realize that it is to their interest to treat their labourers well, and some estate owners even supply them with cinematograph performances and native musical instruments. On estates it is not usual to provide the labourers with food, but rice, which is their staple diet, is supplied at a fixed price, so that no profit may be made by the employer. The Government insists on medical treatment by a fully-qualified European or native doctor. Many estates have their own private hospitals, but a more usual arrangement is for several estates to combine and build central hospitals, some of which are model institutions. Employers are fined for breaches of labour contracts, and employees are fined or imprisoned for disobedience, inciting to desertion, refusal to work, fighting, or drunkenness. All labourers hired under the Coolie Ordinances are registered by the Government.

Contracts with labourers not made under the Coolie Ordinances may be either verbal or in writing, for a definite period; the labourers' names must be registered, and the registers must always be open to inspection by Government officials.

The Chinese coolies in the tin-mines are employed sometimes in *kongsis* (gangs) under contract and sometimes under direct Government supervision. The coolies' agent, or labour contractor, is paid all the costs of importing them, including passage-money, contract, commission, and medical examination, and the value of the wages at the rate of fls. 1·20 per diem. The coolie himself receives wages at the rate of 12*s.* 6*d.* a month, with about 4*d.* a day for food. He must engage himself for at least a year, and often remains working at the mines for no other reason than that he has run so deeply into debt that he cannot get away. Of the 12,547 labourers who completed their contracts in 1913 only about 18 per cent. returned to China.

Employers are authorized to sign labour contracts only through the medium of a qualified recruiting agent, who has to pay all the expenses of medical examination, transport, &c. In 1908 the cost of recruiting amounted to about fls. 65 per head, but in 1914 it had increased to fls. 125 or more. In 1914 in the whole of the Outer Possessions, but mainly in Sumatra, there were 400 estates working with contract labourers, and the number of labour contracts registered was 133,203. Of these contracts 72,397 were made with native inhabitants, 59,012 with Chinese, and 1,794 with labourers from Ceylon, Bengal, and elsewhere.

(2) AGRICULTURE

(*a*) *Products of Commercial Value*

Vegetable Products.—Besides the numerous varieties of forest produce, such as wild rubber, gums, rattans, and bamboos, the island furnishes many valuable crops. Agriculture may be divided roughly into European and native. The European planters direct their efforts almost exclusively to obtaining products in bulk for the European market (e. g. rubber, tobacco, tea, coffee, copra); the native farmer mainly devotes himself to satisfying his own needs by growing rice, maize, sugar-cane, areca palms, and vegetables, but he is beginning also to grow crops intended for the market and only to a small extent destined for native consumption, such as cotton, kapok, gambier, pepper, and nutmegs.

Areca (or *Pinang*) *palms* are second in importance only to the coco-nut among the palm-trees of Sumatra. The natives grow this palm everywhere for the sake of its fruit, the betel-nut. Under the name of areca-nut the young fruit is used as a remedy for dysentery, and is given to cattle as a protection against cold. But the chief consumption in the East is due to the almost universal habit of chewing the ripe nuts. The wood is used for the manufacture of various articles, and the leaves for colouring fishing-nets and lines. The principal exporting areas are Atjeh and Palembang. In 1913 Atjeh exported 12,091 tons, of which 11,565 tons went outside the Dutch East Indies, while Palembang exported 4,649 tons, of which 3,837 went outside. The nuts are sent chiefly to Singapore and Penang, but also in considerable quantities to Germany and America.

Cinchona is grown in Sumatra West Coast. In June 1914 four estates in that province were planted with it, containing 110 *bouws* (1 *bouw* = 1¾ acres) planted with cinchona alone, and 100 *bouws* planted with cinchona mixed with other crops.

Coco-nut palms are grown extensively in several provinces of Sumatra. The figures for 1917 were as follows:

	Bearing.	*Not Bearing.*	*Total.*
Sumatra West Coast .	2,009,585	1,355,760	3,365,345
Sumatra East Coast .	1,254,821	1,868,573	3,123,394
Riouw and Dependencies	2,704,348	3,045,794	5,750,142
Lampong Districts .	876,131	489,895	1,366,026
Tapanuli	548,069	610,343	1,158,412

Coco-nut plantations have been established by Europeans chiefly in Riouw, Sumatra West and East Coast, and Atjeh. There is a certain amount of inter-insular trade in coco-nuts; thus Banka and Dependencies exported 289,000 nuts in 1913 to Jambi, and the Lampong Districts sent 672,000 nuts to Java. Including exports to other islands in 1913, Sumatra West Coast exported 15,473 tons of copra, Sumatra East Coast 5,404, and Atjeh and Dependencies 3,909. There is also some export of coco-nut oil from Sumatra West Coast. The manufacture of brushes and yarn from coco-nut fibre has not made much progress in the Dutch East Indies.

In 1913 there were altogether in Sumatra about 63,000 acres planted with coco-nut palms alone, and about 67,000 planted with coco-nut palms and other crops. In Sumatra East Coast there were 14,258 acres belonging to European companies. Native cultivation has been much hindered by the Chinese middlemen, who systematically rob the native by making advances on the coco-nut crop while on the trees, thus obtaining the nuts at far too low a price. One of the results of the system is that the native devotes little care to the condition of the product, since it is only the middleman who benefits. The native has also an interest in drying his copra badly, and adding foreign substances, in order to keep up the weight. At one time Padang copra obtained such a bad reputation through being taken from unripe fruit and badly dried, generally over a fire, that there was practically no market for it. Organization is needed, for at present if one merchant refuses copra because the quality is bad, there is always another ready to buy it because of the contracts which he has to fulfil.

Coffee was grown by forced cultivation till 1908, when the Government gave it up. In 1913 there were 30,000 acres in Sumatra East Coast planted with *Robusta* coffee and 6,000 with Liberia. Most of this coffee was interplanted with permanent crops such as rubber. The Sumatra crop of 1913–14 consisted of 36,817 *piculs* (1 *picul* = 133·33 lb. avoirdupois) of *Robusta*, 49,875 of Java (*Arabica*) coffee, and 7,709 of Liberia. It was estimated that in 1914 there were about 419,000 acres planted with coffee interplanted with other crops, and 27,500 planted with coffee exclusively. The East Coast product is said to be the best. The Government has never succeeded in producing coffee crops in Sumatra as plentiful or as good as those in Java; it has been gradually abandoning its plantations, letting the land upon long leases, as in Java. Sumatra does not export its coffee direct, but sends it to the markets of Java.

Cotton is grown mainly in Palembang. The native crop is short fibred and of small commercial value. Measures have been taken by the Government in Sumatra, as in Bali and Lombok, to introduce foreign varieties, yielding more valuable crops. The long staple Bourbon cotton has been introduced and appears suitable for extensive planting in young rubber plantations. But as yet cotton cultivation by Europeans is insignificant and most of the cotton produced is grown by native farmers, generally in rotation with rice. The raw cotton exports from Palembang increased from 6,000 tons in 1904 to 7,900 tons in 1913. No cleaned cotton was exported in 1904, but 411 tons were exported in 1913, of which 380 tons went direct to foreign countries, the bulk going to Germany. There are several large ginning plants in Palembang, notably that of the Jambi Company.

As America tends to consume more and more of her cotton crops at home, placing only the surplus on the world's markets, there is a strong movement in the Dutch East Indies to stimulate cotton cultivation, but the native cotton will not be of much importance for the European market while it continues to be shipped raw; in this condition it can find purchasers only in China and Japan. Machinery for removing the seeds to make the raw cotton fit for the European market is too costly for the native grower. If large installations are made in the principal centres of cotton cultivation, the problem may be solved. But costly factories can be erected only if there is a certainty of constant supplies of cotton. Such factories would, however, encourage the grower, making him independent of the Chinese middleman, and enabling him to obtain better prices than he can hope for now, while oil and cattle food could be made as by-products.

The preparation of the seeds in the Dutch East Indies will be an important economy, in view of the very high freights for cotton seed. At present seed is exported from Palembang only; in 1913 the export was about 500 tons (value fls. 41,000), which was almost all shipped to England, while 12 tons of seed of the best available varieties of cotton were sent to various parts of the Outer Possessions.

Gambier is largely exported to Java. In 1913 6,689 tons were exported from Riouw and Dependencies. Much of it goes *via* Singapore.

Ground-nuts are greatly increasing in importance. They are popular as a 'second crop', for they make very small demands upon the soil and require but little irrigation, while the necessary disturbance of the earth prepares the ground for the cultivation of rice. The exports from Sumatra West Coast began in 1910, and the agricultural adviser at Fort de Kock reported them as amounting to 6,024 *piculs* in that year, and to 11,350 *piculs* in 1912. The native farmers in Palembang have also been induced to turn their attention to ground-nuts, largely by means of official trial plantations, and have taken up the new industry with such zeal that it is not improbable that it may supersede cotton cultivation in Palembang.

Kapok is not cultivated systematically to any large extent. Most of the product is supplied by the trees along the roads on European plantations and the supporting plants in pepper gardens. In the hills, however, there is a rich volcanic soil which is eminently suitable for the cultivation of kapok in conjunction with maize and other food-stuffs. Most of the exports go to Holland. In 1913 Atjeh exported 141 tons and Palembang 325 tons. The oil, obtained by primitive native methods of crushing, was mainly used in soap factories, a much smaller part being used for human consumption, while the residue of the crushed seed was made into cattle-cake. A good deal of kapok seed is wasted because the natives have not the costly machinery necessary for separating the seeds from the fibre.

Maize is a popular food in most of the Outer Possessions, especially when the rice crop is unsatisfactory. It is grown in several areas, especially in the uplands, but is exclusively consumed by the native population.

Rice is the chief product of native agriculture and the chief food of the people. It is grown in all the provinces of Sumatra, but the 'wet' system of cultivation is found only in the Padang district and to a small extent in Atjeh and Palembang. The only Residency that exports more than it imports is Sumatra West Coast. In 1913 the exports and imports of husked rice were as follows:

	Exports. *Metric Tons.*	*Imports.* *Metric Tons.*
Sumatra West Coast	2,892	1,055
Tapanuli	35	6,111
Benkulen	—	2,331
Lampong Districts	8	4,439
Palembang	2,112	10,092
Jambi	249	2,951
Sumatra East Coast	365	99,586
Atjeh	65	12,369
Riouw	1,471	12,250
Banka	—	27,655
Billiton	140	550
Total	7,337	179,389

Rubber developed in importance enormously a few years ago. At the end of 1911 it was estimated that in Sumatra East Coast there were 150,000 acres under rubber, and in 1912 about 55,000 acres more were planted. During these two years the Hollandsche Amerikaansche Plantage Maatschappij, registered in Holland but controlled from the United States, alone planted 27,500 acres with rubber. At the end of 1913 there were 217,300 acres in Sumatra East Coast planted with *Hevea* rubber, and about 6,000 with *Ficus*. On the east coast of Atjeh there were 8,000 acres under *Hevea*. At Langsar in Atjeh the Government controls a rubber estate, of which 468 *bouws* were under cultivation in June 1914. At that date there were altogether 213 rubber estates in Sumatra, of which 184 were in Sumatra East Coast, 17 in Atjeh and Dependencies, and 12 in the Lampong Districts. Sumatra East Coast alone is expected to produce 29,000 tons of rubber in 1919.

The total export of plantation rubber from Sumatra East Coast in 1916 was about 8,209 metric tons as compared with 7,109 metric tons in 1915. The destinations were as follows:

	1915. Metric tons.	1916. Metric tons.
United States	2,037	4,170
United Kingdom . . .	3,591	2,818
Straits Settlements . .	524	1,197
Netherlands	946	14
Italy	11	—
Canada	—	10

Spices.—There has been a tendency for European enterprise to abandon the cultivation of spices, but between 1904 and 1913 there was a decided increase in their cultivation by natives in Sumatra West Coast, Tapanuli, and Atjeh. The export of *nutmegs* in 1913 from Sumatra, including what was exported to other islands of the Dutch East Indies, was 400 tons of nutmeg and 69 of mace. Sumatra West Coast exported 262 tons in that year to all destinations. Of *cloves*, which are mainly important in the Moluccas, about 43 tons were exported from Benkulen in 1913, and small quantities from Tapanuli and Sumatra West Coast. *Pepper* is exported largely to other islands of the Dutch East Indies, the black pepper of the Lampong Districts in particular being exported to Java. Of the 5,000 tons of white pepper exported in 1913, Banka and Dependencies exported 2,779 tons, while of the 19,000 tons of black pepper exported in the same year the Lampong Districts exported 11,537 tons and Atjeh 3,020 tons.

Tea was first cultivated in Sumatra East Coast in 1912, when about 2,000 acres were planted; in 1913 about 6,000 acres had been planted, and in 1917 the area under cultivation was more than 12,350 acres, of which, however, only 4,200 were producing. The mountainous districts of Sumatra are particularly suited to the cultivation of tea, and the best results are obtained in a moist atmosphere at an altitude of between 1,000 and 2,500 ft. Sumatra teas are mostly sold in England. The first tea crops were shipped in 1914. In 1916 the total quantity produced was 3,377,800 lb.

Tobacco is grown much more extensively in Sumatra than in any other of the Outer Possessions. The seed of the Sumatra tobacco came originally from Java, but the quality of the tobacco is superior owing to the advantages given it by the climate and soil and the greater intelligence of the coolies who grow it. Java tobacco is less expensive to prepare and more uniform in quality, but the best Sumatra tobacco has a thin silky-looking leaf of such excellent colour and quality that the Java planters have never equalled it ; it is second only to that of Havana for the manufacture of cigars. The natives produce also a large quantity of *krossok,* a coarse native tobacco.

The Deli Maatschappij was formed in 1869 for tobacco cultivation in the district of Deli. It has a capital of £750,000. An experimental station has been established at Medan for the purpose of giving scientific advice to tobacco-growers. In 1913 99 plantations in Sumatra produced 19,933,000 kg., but in the following year 123 plantations produced only 5,351,000 kg. In 1913 the Deli exports were 25,777 tons, valued at fls. 69,598,000. Besides the increasing cultivation of tobacco in Deli a great deal of tobacco is produced in the south and west of Sumatra.

Live-stock.—The most useful domestic animal in Sumatra is the buffalo. In 1913 there were 323,280 buffaloes, 292,200 cattle, and 61,300 horses. Cattle, buffaloes, horns, and hides are exported. The non-

Mohammedans breed pigs, particularly in Nias and Tapanuli. Roe-deer are abundant, and the flesh is largely eaten, generally dried.

(*b*) *Methods of Cultivation*

In the Dutch East Indies it is hardly too much to say that the degree of civilization attained by a people can be measured by the extent to which they have carried the cultivation of rice, which is regarded essentially as a product of civilized men. Although in Sumatra rice is generally grown, it is difficult to persuade the natives to improve their antiquated methods, to which they cling with fanatical attachment and religious fervour. So the 'wet' system of cultivation is found only in certain districts, where it has been inherited from Hindu-Javanese settlers.

In 1905 a Department of Agriculture was created in the Dutch East Indies. Its chief business is the promotion of native agriculture. In 1908 an assistant inspector of native agriculture in the Outer Possessions was appointed, and in 1910 an agricultural adviser for Atjeh and two others for the rest of Sumatra. There are now two agricultural instructors for Sumatra West Coast and Benkulen, and two agricultural advisers for Atjeh and Palembang.

The relation of imports to exports in rice shows how great is the need of systematic Government assistance. It is only by constant persuasion, and especially after observation of experimental rice-fields cultivated on modern methods, that the natives can be induced to increase their output. Courses of lectures are given to the natives, and some improvement is gradually taking place. Better methods of planting, the use of better seed, and improvements in irrigation would greatly increase the production. At present the only province where the exports of rice exceed the imports is Sumatra West Coast, where the rapid rivers on the plateau in the middle of the Barisan Mountains are used for irrigation by means of wheels.

Instruction is also given in the planting of 'second crops' such as beans, maize, cassava, potatoes, &c., for native consumption, and oil-seeds, ground-nuts, tobacco, &c., for commercial purposes. The natives greatly prefer to cultivate perennial crops for sale, and to buy their own food with the money thus obtained.

(c) *Forestry*

Sumatra is enormously rich in forests, which have been very little exploited. The forests begin at a much lower altitude than in Java, and contain oaks and chestnuts, teak, sandal, and ebony, besides gum trees (especially camphor, benzoin, and damar) and palms in profusion. Timber produced in Palembang has been extensively used in the construction of the railway in the south of Sumatra.

Four districts of forest administration were established in Sumatra in 1913. Before that date there was no forest administration outside Java and Madura. The forest staff of the Outer Possessions in 1914 numbered 52, the majority being employed in Sumatra. They were engaged in a preliminary investigation of the position, composition, and condition of the woods. Exploitation may be undertaken only after a special forest concession has been obtained, which may be withdrawn if exploitation does not begin within a year after it has been granted. A great many concessions have been applied for, but few have been worked. In order to stop the wasteful methods of felling practised by the natives of Palembang regulations have been drawn up which include the levying of a tax. Owing to the large size of some of the tracts of land required on long leases for various purposes in the

Lampong Districts, it has been found necessary to reserve a number of forest areas where there are wells.

The timber trade of Singapore is almost entirely dependent on exports from the mainland of Sumatra and the Riouw-Lingga Archipelago. This trade is called the 'Panglong Exploitation' (Panglong=*Kongsi*, a Chinese gang) and Chinese are employed on the felling.

The Panglong Exploitation comprised, in 1914, 93 places where timber was worked into beams, 37 places at which firewood was cut, 10 at which planks were sawn, and 71 at which charcoal was prepared. The timber is usually exported in beams to Singapore, where it is sawn into planks before re-exportation. The total revenue received by the Sumatra Government from timber taxation in 1914 was fls. 100,435, as compared with fls. 130,883 in 1913. In the island of Simalu, north-west of Sumatra, two large forest concessions were granted in 1914.

(*d*) *Land Tenure*

The numerous sultans are allowed to grant concessions, subject to the approval of the Government. The general conditions of land tenure described in *Java*, No. 82 of this series, apply also to areas under direct Government administration in Sumatra. The Government claims ownership of all the soil and subsoil, but, as a very large part of the island is not even surveyed, official control is necessarily only partial. The Dutch Government will not grant concessions of land directly to foreigners, though Dutch concession-holders are allowed to transfer their estates.

(3) FISHERIES

Though fish are even more plentiful off the coasts of Sumatra than off the coasts of Java, the main business of the Sumatra fisheries is to supply purely local demands. Bagan Si Api-Api, at the mouth of the River Rekan in Sumatra East Coast, has become a centre of export, but the river is silting up, thus making it more and more difficult to fish with stationary nets from the land. However, the production of dried and salted fish at that centre in 1913 was no less than 20,400 tons,. of which a large proportion was consumed in Sumatra East Coast. Bengkalis exports a great deal of dried fish. Sharks' fins are sold to the Chinese, and the prepared roe of the Indian shad or trubuk, as well as its dried flesh, is extensively exported. Mackerel, tunny, and ray abound in the seas, and carp, barbel, and eels in the rivers. Crabs and crayfish are abundant.

(4) MINERALS

Sumatra is immensely rich in minerals, and it is probable that some of its most valuable deposits have not yet even been tapped.

Coal.—The Ombilin coal-mines near Sawah Lunto in the highlands of Padang were opened up in 1892. About 5,320,475 metric tons were extracted between 1892 and 1914. The mines are worked by the Government. The field is about 10 km. by 9 km., and has been estimated to contain about 200,000,000 tons; some seams are as much as 23 metres thick. The coal is shining black, clean-looking, and in general reputation superior to all the other Dutch East Indian kinds. Its burning qualities are good, and it ignites easily with a bright flame; it produces very little ash and residue, and gives off little smoke and soot.

The greater part of the production is sold to private buyers, who took 80 per cent. of the total output in 1913, and 76 per cent. of the total output in 1914. The Government uses nearly all the remainder. Coal for private buyers is delivered at Emmahaven (connected with Ombilin by a railway 156 km. long), or is shipped to Singapore, Surabaya, Macassar, and Tanjong Priok (Batavia).

The output has grown rapidly and consistently. In 1892, the first year of working, it was 1,758 metric tons; in 1893 it was already 46,075 tons; in 1903 it amounted to 201,292 tons, and in 1909 to 325,000. In 1914 the output was larger than ever, as all external works of preparation were suspended, and efforts were concentrated on the actual working of the coal, for which the demand exceeded the supply. The total, 443,141 metric tons, was a very large proportion of the 609,888 tons supplied that year by the principal coal-mines of the Dutch East Indies.

The financial position of the Ombilin mines can be best shown by the following table for the years 1912–14:

	1912.	1913.	1914.
Production (metric tons)	407,452	411,071	443,141
Receipts (florins)	3,614,208	3,678,138	4,104,689
Working expenses (florins) . . .	3,276,068	3,309,051	3,604,954
Net profit after deducting share paid to the Sumatra Railway (florins) . .	338,140	369,087	338,909

The sum of fls. 160,826 was written off from the net profits for interest for the first time in 1914.

There is coal also in the Residency of Benkulen, 70 miles inland from Benkulen, where an Australian Company has a concession through a Dutch Company.

In the Residency of Palembang the Lematang Exploratie Syndicaat has been working a concession since 1896, but the output has not exceeded 1,000 tons in any year. The Dutch East Indian Government is now obtaining good steam coal in the same Residency at Tanjung, near Muara Enim, on the new South Sumatra Railway. This coal is said to be superior even to that obtained at Ombilin. In March 1918 the production was 2,500 metric tons, and in May probably 5,000, while it is hoped soon to increase the production to 20,000 metric tons monthly.

At Indragiri the Tjenako Steenkolen Maatschappij holds a concession, but has produced little coal. There are also coal-fields in the Lampong Districts, at Tapanuli Bay (Atjeh), and at Tapan, near Padang, but very little coal has yet been produced from them.

Copper is said to be plentiful in the valley of the Paningahan, Sumatra West Coast, but has not been worked.

Gold is believed to have been worked in Sumatra and the island of Nias before the Christian era, long-neglected workings having been found by the Portuguese at the end of the fifteenth century. Tradition has for centuries identified Mount Talamau (or Ophir) with the site of King Solomon's mines. In 1914 the production of gold in Sumatra was more than 2,000 kg., and in 1915 had risen to 3,764 kg.

Gold in Sumatra occurs in vein deposits, Tertiary gravel beds, and alluvial and beach deposits. The natives wash the river sediment in the rivers of Atjeh, Tapanuli, Jambi, and Palembang, and also work the Tertiary beds in a primitive way by means of adits, but the more important gold-mining companies exclusively work the vein deposits. A new gold-mining centre is now being actively opened up in the neighbourhood of Padang.

The principal gold-working mines of Sumatra are those controlled by the firm of Erdmann & Sielcken in the Residency of Benkulen. These are the Rejang Lebong, capital fls. 2,500,000, the Ketahun with equal capital, and the Simau, capital fls. 1,875,000. In 1914 the production of gold from these three mines was 2,108 kg., or 60 per cent. of the total production of the Dutch East Indies, and that of silver 9,910 kg., or more than 30 per cent. of the total production of the Dutch East Indies. In 1911 the value of the gold produced by the Rejang Lebong mine was fls. 4,280,375 of that produced by the Ketahun mine fls. 813,725, and of that produced by the Simau mine fls. 1,306,800.

The area known as the Rejang Lebong district lies about 50 miles north of the town and harbour of Benkulen. The veins sometimes extend a length of 4 km., and water-power can be made use of everywhere for the working of the ore. Silver-mining is carried on conjointly with gold-mining, silver always being found with gold in the East Indies, in the average proportion of three to one. A century ago the Rejang Lebong mine could be reached only by a path over steep mountains and through dense jungle, but now there is a road on which motor-cars can run, and the journey from Benkulen, which once took three weeks, is made in three hours.

The Rejang Lebong mine declared a dividend in 1908 of 100 per cent., and subsequent dividends were:

	Per cent.		*Per cent.*
1909 . . .	85	1913 . . .	15
1910 . . .	90	1914 . . .	15
1911 . . .	50	1915 . . .	15
1912 . . .	25	1916 . . .	15

The Ketahun mine paid no dividends between 1912 and 1916. Poorer ore has had to be worked recently. The first dividend in 1903 was 16 per cent. on the ordinary and 25 per cent. on the preference shares. The Simau mine declared its first dividend of 20 per cent. in 1912, and in the four following years paid 20 per cent., 30 per cent., 30 per cent., and 17 per cent.

Iron is worked by Europeans in the Lampong Districts to a small extent, and is also found in Tapanuli, Sumatra West Coast, and Benkulen.

Manganese and *tungsten* ores exist in Sumatra and in the island of Banka, but neither they nor such *lead* ores as occur have ever been extensively worked.

Petroleum.—The first concession granted in the petroleum industry in the Dutch East Indies was that granted in 1883 at Telaga Said in the district of Langkat, in the north of Sumatra, and taken over in 1890 by the Royal Dutch Petroleum Company. It is about seven miles from Pangkalan-Brandan. This company also bored wells at Tamiang, and in the Palembang Residency, notably at Muara Enim. All the Sumatra petroleum wells are now controlled by the Bataafsche Petroleum Maatschappij, which was incorporated in Holland in 1907 and has a capital of £13,200,000. It combines the interests of the Royal Dutch Petroleum Company and the Shell Transport and Trading Company, which hold respectively three and two of the five shares into which its capital is divided.

The exports from the Sumatra East Coast in 1912 were 43,698,484 gallons of kerosene shipped to the Straits Settlements, China, British India, British East Africa, and Australia, 38,249,511 gallons of benzene shipped to the Straits Settlements, Australia, and South Africa, and 1,423,230 gallons of liquid fuel (residue) shipped to the Straits Settlements and British India.

The production of the principal petroleum districts in Sumatra about 1910 was estimated to be as follows:

Name of Concession.	*District.*	*Metric tons.*
Muara Enim . . .	Palembang Residency	112,000
Karang Ringin . .	,,	14,000
Banjarsari . . .	,,	21,000
Babat . . .	,,	115,000
Suban Jerigi . . .	,,	105,000
Lematang . . .	,,	25,000
Telaga Said . . .	Sumatra East Coast .	10,000
Bulutelang . . .	,,	135,000
Peureula . . .	Atjeh . . .	230,000

In 1907 the Palembang Residency produced 72,010,000 gallons of petroleum, Sumatra East Coast 30,605,000 gallons, and Atjeh 54,430,000 gallons.

In 1913 the production of the oil-wells in the north of Sumatra was recorded as 290,097 tons, and that of the wells in the south as 231,850 tons.

The Jambi oilfields are now to be developed by the Jambi Petroleum Company, which was established in the spring of 1918 in Holland with a capital of fls. 5,000,000, of which the Colonial Government holds a large proportion. The colony will therefore receive a large share of the profits, and has power to take over the crude petroleum products at fixed prices.

The benzene obtained from the Sumatra wells is of the finest quality, and is shipped in large quantities to Europe. Formerly, when the demand for benzene was small, Sumatra oil was less esteemed, for generally it is of much lighter quality than Borneo oil, producing a higher percentage of benzene, kerosene, and lubricating oil.

Tin is not worked in Sumatra, though it is found on the west coast and at Siak; but tin-mining is the chief industry of the islands of Banka, Billiton, and Singkep. Tin has been worked in Banka for 200 years; the Government owns the workings. Since 1820, when the Government placed the industry under European supervision, Banka tin has maintained a high reputation for purity. Since 1852 the industry has been directed by mining engineers who have qualified in Europe. In recent years the tin has undergone a chemical test before export, so that the Banka stamp is now a guarantee of purity.

There are practically no tin veins in Banka. The ore is worked almost exclusively in open pits, excavated in the alluvial deposits of rivers and the alluvial strata on the slopes of small hills. They are mostly situated on the north and east coasts. The strata are generally from 1 decimetre to 4 decimetres in thickness, though here and there they are several metres thick.

After the ore has been washed it is generally smelted in a local smelting-house by means of a simple blast furnace. In each of three districts there is a central smelting-house, but it is proposed eventually to establish a single central smelting-house for all the ore produced in Banka.

During the war increasingly large quantities of tin from Banka were exported to the United States after trans-shipment at Batavia. Before the war Banka tin was sold almost exclusively by auction at Amsterdam and Rotterdam in alternate months. Only small quantities were sold by auction in Batavia, or supplied to Government services in the Netherlands and the Dutch East Indies. Banka tin is shipped and sold by the Nederlandsche Handelmaatschappij, who act as commission agents for the Dutch East Indian Government, and it is transported, under contract, by the Rotterdamsche Lloyd and the Nederland Stoomvaart Maatschappij.

It is estimated that the production of tin in Banka in 1917 was about 240,000 *piculs*. In the years 1911 to 1913 the production was as follows:

	1911.	1912.	1913.
Number of mines	366	376	362
Average number of labourers	21,292	22,296	21,436
Production in piculs	250,496	244,749	255,035
Metric tons sold in Holland	15,358	16,329	15,390
Cost price (florins) per picul, including cost of freight and selling	39	43	45
Average sale price (florins) in Holland per picul	142	154	152
Net receipts (florins) for tin sold	33,967,966	39,387,606	36,566,674
Net profit (florins)	25,940,397	30,323,600	25,219,074

Chinese coolies are employed to work the tin, sometimes in *kongsis* under contract and sometimes under direct Government supervision. In the year ending March 1914, 6·06 per cent. of the total production of tin was obtained under direct Government supervision. Modern machinery has been introduced in the mines directly supervised by the Government, and has of course enabled the managers to achieve equal results with much less manual labour.

In Billiton, though the ore is mostly found in open pits, as in Banka, yet there are also tin veins rich enough to be worked. In May 1914 there were 47 mines in Billiton. Tin-mining is carried on by a company called the Billiton Maatschappij. It is farmed out to *kongsis* of Chinese, who are supervised by Europeans and work at fixed prices settled in advance. Formerly the Rajahs of Palembang used to compel the natives of the island to work the tin, which was shipped to Singapore to be smelted. The Billiton Maatschappij received their original concession in 1852, and it was extended in 1892 for a further period of 25 years; they are bound by the terms of their charter to surrender five-eighths of their net profits to the Government, and the value of the Government's share in 1916 was estimated at fls. 1,000,000. In the year 1907–8 Billiton produced about 4,000 tons from 73 mines, in which the average number of workers was 11,128; a small amount of tin was also produced by natives. The production of the Billiton mines in 1910–13 was:

	1910.	1911.	1912.	1913.
Kilograms . . .	4,541,802	4,147,708	4,453,174	4,614,495
Share of profits paid to Government (florins) .	2,286,961	1,858,775	1,938,062	819,184

Billiton tin is sold by public auction in Batavia, and the largest buyers for many years before the war were Maintz & Company, a firm with head-quarters in Paris, and the International Trading Company of Rotterdam.

In Singkep the tin is worked mainly in open pits, but in the hills the working is also carried on with horizontal adits. Near Singkep tin ore is found at the bottom of the sea, and is being worked by the use of steam dredgers. The mud brought to the surface is washed on board, and the ore is then landed at Singapore for smelting. The Singkep Company operates under the terms of a concession granted in 1889 by the Sultan of Lingga. The production of the Singkep mines in 1910–13 was :

1910.	1911.	1912.	1913.
Kg.	*Kg.*	*Kg.*	*Kg.*
405,154	869,016	635,091	671,592

The total production of the tin-mines in Banka, Billiton, and Singkep was :

	Metric tons.
1910–11	20,885
1911–12	19,607
1912–13	20,219
1913–14	21,156
1914–15	20,526

In addition to the minerals already named, *alum*, *naphtha*, *sulphur*, and *saltpetre* abound near the volcanoes, and *antimony*, *nickel*, *cobalt*, *zinc*, *quicksilver*, *bismuth*, and *arsenic* are known to exist. There is some *marble* in Sumatra, but it is reported to be of too soft a quality for building purposes.

(5) MANUFACTURES

A British engineering company, the United Engineers, Limited, has established itself at Medan with a fully equipped plant for the construction and repair of machines for rubber factories and others. It meets with vigorous Dutch and German competition.

There is a large Portland cement factory at Padang, producing cement of excellent quality. Bricks and tiles are made at Medan and elsewhere. Ice and mineral waters are made at Medan, Padang, and Kuta Raja. Vegetable oil factories have recently been established at Padang and Medan.

The native manufactures are local and unimportant.

They include basket-work, rattan furniture, iron weapons, pottery, and clothing. There is a great deal of hand-loom weaving by women, who chiefly use imported yarn.

(6) Power

Hydro-electric installations in Sumatra are in the experimental stage. The inconstancy of the flow of water in most of the rivers is a serious obstacle, but in the regions of the mines the rainfall is sufficiently abundant to ensure an ample supply of water for mining operations at all times.

(C) COMMERCE

(1) Domestic

(*a*) *Principal Branches of Trade*

The principal areas of domestic trade in Sumatra are Sumatra West Coast (which comprises only a portion of the west coast of the island), Sumatra East Coast, including Medan and the intensively cultivated areas north and south of it, and the southern area, in which Palembang is the most important settlement. Local markets are held in all the chief towns and settlements every few days, and there is much bartering. The trade of the interior of Sumatra is chiefly carried on by native *praus*, which bring down to the coast gambier, rattans, gums, resins, and other produce. Small coasting vessels carry the produce from port to port, and the vessels of the Koninklijke Paketvaart Maatschappij call fortnightly at the principal coast towns.

In the domestic commerce of Sumatra West Coast, the railway which starts at Pajokumbo (Pajakombo) in the Padang highlands and connects at Padang-Panjang with a branch to the Ombilin coal-fields is a very important factor. Coffee and other crops are brought to Padang by this railway, and there is a busy native market held weekly at Pajokumbo, to which crowded trains travel from Fort de Kock, 10 miles distant.

The domestic trade is largely in the hands of Chinese, but some of the native tribes make good traders. The industries in petroleum, tobacco, rubber, and tea have only recently been established in Sumatra, and are entirely directed by Europeans.

(*b*) *Towns and Markets*

Barus was formerly the principal export centre on the coast of Tapanuli for rattans, benzoin, and camphor. Both Barus and Singkel were superseded by Siboga, when Government control of the hinterland of Siboga enabled Bataks bringing their produce from the highlands to reach it in safety. It is a distributing centre for fish and imported rice.

Bengkalis, the port of the island of that name, has a considerable trade in timber and fish.

Benkulen is on the west coast. Sir Stamford Raffles always believed that he could make it one of the most prosperous cities in the East Indies, but partly, no doubt, on account of its unhealthy site and the silting up of the old harbour it has failed to fulfil these expectations. The country around Benkulen produces rice, tobacco, pepper, gambier, and rattan. The population is about 8,000; in 1905 there were 163 Europeans and 802 Chinese.

Fort de Kock is the capital of the highlands of Padang. The non-military population is less than 2,500. This town is the principal sanatorium for Padang Europeans, as it is about 3,000 ft. above the sea. Native hawkers sell beadwork, native jewellery and arms, and native brocades and other fabrics. The shops, including the numerous 'portret' studios, are nearly all owned by Chinese. The town has a weekly market, inferior in size and interest to that of Pajokumbo.

Kuta Baru, in Tapanuli, was a great city under the Hindus, and ranked next to Padang as a market for benzoin and camphor in the seventeenth century, but its trade was killed by the Achinese occupation in the eighteenth century.

Kuta Raja has now a small population, but pepper cultivation is still important, and in time the town is likely to become as populous and prosperous as it used to be in the days when Atjeh exported annually 18,000 tons of pepper, which represented nearly two-thirds of the world's consumption. Its port is Oleh Leh (population under 1,000), with which it is connected by a steam tramway.

Medan lies on the Deli at its confluence with the Babura. Until fifty years ago its site was surrounded by jungle. It is a modern city in appearance, though it contains a large Chinese quarter. The port of Belawan-Deli (about 40 miles distant) is connected with it by railway.

Natal is a small port on the Natal river in Tapanuli. Fishing is one of the chief local industries and there is a Government salt warehouse. There is direct trade with Singapore in native produce.

Padang is on the west coast. The bulk of the coffee, rubber, tobacco, copra, gums, hides, and timber of the central districts passes through it. (For details of the port, see above, p. 26.)

Padang Sidimpuan, the capital of the Residency of Tapanuli, is an active commercial centre. Its port is Siboga, with which it is connected by a good road.

Pajokumbo (*Pajakombo*), the terminus of the railway, 10 miles beyond Fort de Kock, is surrounded by luxuriant coffee plantations. Its population is under 2,000. It is chiefly famous for its weekly native market; this has a bird section, comprising edible, plumage, singing, and fighting birds, a butchers' section, where whole carcasses of buffaloes are trussed up, and cuts carved from them on demand, and a large area given up to foreign manufactures, including chromos, table-covers and draperies, and cheap Dutch porcelain. Candlesticks and other articles made by the natives from old kerosene tins, native jewellery and beadwork, and native fabrics of all kinds, including gold thread brocade of some artistic value, are profusely displayed. The region is inhabited by Menangkabau Malays, the most civilized of the natives of Sumatra, who cultivate rice with skill and industry.

Palembang stands on the Musi river, at a point where it is more than 1,000 ft. wide. The houses rest on large rafts, and the Chinese and Arab merchants who live in them take them up into the interior of the country when they go to purchase goods.

Rengat, the ancient capital of the kingdom of Riouw, which had large territories on the mainland of Sumatra, is now almost a dead city. Its population is only a few hundreds, but small steamers maintain a service between it and Singapore, though the Kwantan river is seriously obstructed by a huge delta. Navigation has been improved by dredging.

Siboga (*Sibolga*), in Tapanuli Bay, is the principal port of Tapanuli. It is the main outlet for the agricultural and forest products of the interior of Tapanuli, and is also the chief mart of the natives. There is a large domestic trade in fish, and there is also trade in rice, sago, cattle, and native fabrics. Many of the shopkeepers and coolies are Bataks.

Though coffee and other crops can be successfully grown, Siboga is notoriously unhealthy, and the immediate hinterland is not regarded as productive, but that is mainly because the forests have not been much reduced. Trade is largely by barter.

Singkel, on an island in the delta of the Simpang river, was under the Achinese an important town, but has declined since its occupation by the Dutch (1840). It is an important mart for natives of the highlands.

Telok Betong, the capital of the Lampong Districts, lies at the head of a bay, with deep water. Most of the trade is in the hands of Chinese. Coffee, pepper, and rattans are the chief exports.

(c) *Organizations to promote Trade and Commerce*

In 1911 the Department of Agriculture, created in 1905, took over the responsibility for trade and industry, and has since been called the Department of Agriculture, Industry, and Commerce.

There is a Chamber of Commerce at Padang, founded fifty years ago. It is an official institution with five members, appointed to advise the Government. Medan has no official Chamber of Commerce, but both Medan and Padang have active commercial unions of old standing, which compile local statistics, petition the Government to remove obstacles to trade, and so forth.

(2) FOREIGN

Sumatra's share in the trade of the Outer Possessions[1] is preponderant. Taking an average of recent years, the value of the import trade of Sumatra has been about 70·8 per cent. of the whole import trade of the Outer Possessions, and that of the export trade about 64·4 per cent. of the total for the Outer Possessions. The foreign trade of Sumatra East Coast is the principal component of Sumatra's trade as a whole. In 1915 and 1916 that district did about 36·8 per cent. of the import trade of the Outer

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[1] See above, p. 16.

Possessions, and about 36·7 per cent. of the export trade.

Statistics for the trade of Sumatra are incomplete and contradictory. The figures most easily obtainable are those for the Outer Possessions as a whole. Where export and import statistics are separately compiled for Sumatra, they often relate only to Sumatra East Coast, with or without the port of Sabang.

In 1916 the values of the imports and exports of Sumatra were as follows:

	Imports. *Florins.*	*Exports.* *Florins.*
Sumatra East Coast	42,600,000	126,300,000
Rest of Sumatra (including Riouw, Banka, and Billiton)	32,300,000	95,500,000
Total	74,900,000	221,800,000

Principal Exports.—The quantities of the principal articles exported from Sumatra East Coast in the years 1910 to 1912 were as follows (figures for values are not available):

		1910.	1911.	1912.
Benzene . . .	gallons	33,583,224	35,377,400	38,249,511
Petroleum. . .	„	47,500,192	54,604,800	45,121,714
Black pepper . .	tons	2,250	1,353	1,673
Candles	„	1,522	1,071	173
Coffee	„	1,123	1,120	527
Copra	„	3,797	4,264	4,043
Fish, salted or dried .	„	6,090	5,264	2,878
Gambier	„	1,931	1,981	2,560
Guttapercha . . .	„	53	43	46
Paraffin	„	2,155	1,521	—
Rattans	„	2,349	4,542	3,300
Rubber	„	539	813	1,807
Tapioca flour . .	„	521	398	933
Tobacco	bales of 78 kg.	234,133	280,704	282,920
Horses and ponies .	number	809	713	342

Principal Imports.—(*a*) *East Coast.* The principal articles imported into Sumatra East Coast in the years 1910 to 1912 were as follows (figures for values are only available in a few cases):

In Value.		1910.	1911.	1912.
		£	£	£
Cotton goods		200,605	202,834	225,073
Drugs and medicines		19,946	23,950	26,255
Haberdashery		21,108	18,166	18,766
Iron and steel goods		110,072	83,626	102,546
Machinery and implements		68,057	94,157	100,251
Manures		25,176	25,123	40,722
Soap		12,760	16,288	18,816
Sulphuric acid		18,968	19,788	1,642
Tin plates		106,598	113,980	78,239
Yarns		24,207	30,156	36,968
In Quantity.				
Beer	kg.	136,373	152,195	211,877
Bicycles	number	232	240	647
Biscuits	lb.	237,278	155,844	221,979
Butter	,,	49,962	54,799	68,314
Cement	barrels	18,247	27,364	30,749
Flour	tons	2,953	3,486	3,824
Matches, European	gross boxes	17,622	4,857	—
,, Japanese	,,	143,176	96,326	111,779
Motor-cars	number	13	13	18
Rice	tons	71,196	81,052	89,475
Sewing machines	number	1,107	1,592	1,557
Tea	lb.	504,545	604,427	617,389

(*b*) *Sabang.* A large proportion of the imports into the port of Sabang are trans-shipped to Sumatra East Coast, but do not appear in the returns of Sumatra East Coast. The principal imports into Sabang for the years 1910–12 were as follows:

In Value.		1910.	1911.	1912.
		£	£	£
Cotton goods		67,921	93,119	97,363
Drugs and medicines		6,979	8,748	14,386
Haberdashery		13,137	13,487	15,457
Iron and steel goods		52,343	88,445	143,395
Machinery and implements		22,252	78,734	127,278
Manures		63,495	61,920	59,700
Soap		2,482	2,211	2,682
Sulphuric acid		—	1,399	18,796
Yarns		2,096	4,206	3,072
In Quantity.				
Beer	kg.	93,600	105,400	104,932
Bicycles	number	1,164	1,282	2,812
Biscuits	lb.	147,582	161,088	240,890
Butter in tins	,,	261,343	258,181	341,682
Cement	barrels	30,566	21,106	30,668
Flour	tons	141	32	45
Matches (Japanese)	gross boxes	117,503	316,610	283,654
Motor-cars	number	63	26	61
Rice	tons	7,243	1,646	1,391
Sewing machines	number	1,010	1,326	1,996
Tea	lb.	6,294	536	—

Cotton Imports.—The values of the imports of cotton manufactures of all kinds into Sumatra ports in 1913 were as follows:

	£
Belawan-Deli	231,000
Padang	390,600
Palembang	173,600
Other ports	161,960

The consumption of European yarns had increased nearly fourfold since 1904 in the whole of the Outer Possessions. In 1913 about 39 per cent. of the total imports of cotton goods at Penang, Straits Settlements, valued at £765,000, were re-exported, principally to Sumatra, and a less but very considerable quantity was re-exported from Singapore to Sumatra. Large quantities of cotton yarn are imported for the native hand-loom weaving industries in Sumatra and the Dutch East Indies generally. Before the war the grey yarn came chiefly from India and England, bleached yarn from England, and coloured yarn, principally red, from Bombay, Italy, England, Germany, and Holland.

(D) FINANCE

(1) *Public Finance*

The finances of the Dutch East Indies as a whole are dealt with in *Java*, No. 82 of this series.

(2) *Currency*

Dutch currency alone is legal in all the Outer Possessions, as in Java. In some Residencies, however, there is still a great deal of bartering.

(3) *Banking*

The Java Bank has branches at Medan, Padang, Palembang, Asahan, Tanjung Pura, Tanjung Balei, and

Bengkalis. The Nederlandsche Handelmaatschappij has branches at Medan, Padang, Palembang, and Kuta Raja. Besides these, the Chartered Bank of India, Australia, and China has branches at Medan and Padang, the Nederlandsch-Indische Handelsbank a branch at Medan, the Nederlandsch-Indische Escompto-Maatschappij a branch at Padang, and the Mercantile Bank of India, Ltd., a branch at Padang.

The establishment of credit banks has been of great assistance to the natives, as it has made them less dependent upon Chinese middlemen.

(4) *Influence of Foreign Capital*

Recently the Dutch have shown more inclination to welcome the introduction of foreign capital into their industries, provided always that the Dutch East Indian Government retain control of all their territory.

At the outbreak of war Germans were more numerous than British in Sumatra, as in Java. Firms like Güntzel & Schumacher (a company formed in 1905) are strongly rooted in Sumatra, though their business has been almost at a standstill since 1914. Before the war the firm held the agencies not only of the Norddeutscher Lloyd and Hamburg-Amerika lines, but of the Canadian Pacific Railway Company, the German Kali Syndikat, the Langkat Petroleum Works, and many English, Dutch, and German insurance companies.

British capital in Sumatra is almost entirely invested in tobacco, rubber, and tea. In Langkat, north of Deli, there are many British residents, and the principal British enterprise is the United Langkat Plantations Company. In 1911 nearly 10 per cent. of the tobacco crop of Sumatra East Coast was produced by British companies, and over 30 per cent. was shipped in

British vessels. Rubber is a still more important field for British capital. Before the great rubber boom of 1909 there were already several British rubber companies established in Sumatra, including the Anglo-Sumatra Rubber Company, founded in 1907 with a capital of £90,000, the Sumatra-Deli Rubber Estates, founded in 1907 with a capital of £240,000, and the United Langkat Plantations Company, mentioned above. This last was originally founded, in 1889, for the cultivation not of rubber but of tobacco, with a capital of £450,000. The Asahan Rubber Estates was founded in 1910 with a capital of £250,000; the Insulinde (Sumatra) Rubber and Tobacco Estates in 1910, with a capital of £100,000; and the Mendaris (Sumatra) Rubber and Produce Estates in 1911, with a capital of £300,000. All these companies, and others of a similar kind, are doing well, and just before the war British companies owned about 36,000 acres of *Hevea* rubber, about half the total acreage then under *Hevea* rubber in Sumatra. The issued capital of British companies invested in rubber at the end of 1913 in Sumatra East Coast was about £6,000,000.

Tea is another British interest. At the end of 1913 about 6,000 acres had been planted in Sumatra East Coast, and of these plantations all except some 500 acres had been started with British capital.

As already mentioned (see p. 53), a British engineering company, the United Engineers, Limited, has established itself at Medan, with a fully-equipped plant for the construction and repair of machines for rubber and other factories. An Australian company, through a Dutch company, has a concession for coal-mining in Benkulen, 70 miles from the port of that name (see p. 46).

The official return of the chief sources of the capital invested in tobacco, rubber, and tea in Sumatra at the end of 1914 was as follows :

	Tobacco.	*Rubber and Tea.*	*Totals.*
	Thousands of Florins.	*Thousands of Florins.*	*Thousands of Florins.*
Dutch	44,401	46,000	90,401
Dutch East Indies	—	5,000	5,000
British	9,432	60,000	69,432
French	—	3,000	3,000
German	—	2,000	2,000
Belgian	—	1,800	1,800
Swiss	600	—	600

(E) GENERAL REMARKS

It will be clear from what has been already said, that Sumatra possesses considerable vegetable and mineral resources. The chief obstacle to its prosperity is the dearth of labour. The population is very scanty, and probably, owing to internecine wars, no greater than it was several centuries ago. The island is three times the size of Java, but its population is not more than one-sixth that of Java. The natives, who are gradually being trained in habits of industry, now show less distaste for unfamiliar forms of work, and several tribes are proving themselves adepts in newly-acquired arts. Industry and ambition are hampered by the fact that every village is practically self-supporting, but the demand for the luxuries of civilization is increasing, and acts as a spur.

Extended communications throughout the island ought to secure a very rapid increase in prosperity. The bulk of the interior of Sumatra has yet to be opened up, and for this purpose the strategic railway in Atjeh will be available, now that the Achinese have apparently been brought into subjection.

Tobacco and rubber are the two products that of late have contributed most to the prosperity of Sumatra. Prices of tobacco have advanced so much during the war that the Sumatra crop of 1916 realized over

£5,000,000, compared with about £4,000,000 in the best previous years. Between January 3 and December 30, 1916, the shares of the Deli Maatschappij rose from fls. 467 to fls. 506, those of the Deli-Batavia Maatschappij from fls. 342 to fls. 411, and those of the Arendsburg (Sumatra) Maatschappij from fls. 509 to fls. 607. But the Dutch authorities and Dutch colonials generally fear that after the war Europe will be too much impoverished to consume as much tobacco as formerly.

It is not probable, however, that the demand for rubber will diminish, except in the unlikely event of synthetic rubber ousting the natural product. The abundant rainfall of Sumatra and its constant high temperature make it peculiarly suitable for rubber cultivation. In one respect it has a decided advantage over Java, for in that island there can never be equally large areas available for rubber. Not only is Java very much smaller, but the population is far larger, and a large part of the cultivable area of Java must be kept available for rice-fields and for other food crops.

It has been estimated that the Dutch East Indies should now be producing about one-quarter of the world's rubber supply. Between 1912 and 1916 the world's production of rubber increased fivefold, but consumption kept pace with it, and in 1916 the cost price of rubber was still, according to a Dutch estimate, only about one-third of the market quotation. The Sumatra crop of 1917 went mainly to America, where the demand for rubber has been increasing to an unequalled degree, mainly owing to the enormous development of the motor-car industry. Out of the 266 rubber estates of the Outer Possessions in 1914, no less than 213 were in Sumatra, so that it may be safely anticipated that a large proportion of the increased prosperity attending the trade will fall to this island.

ISLANDS OFF THE WEST COAST

Simalu (*Simeulu*), 54 miles by 14 miles, is hilly, rising to 1,870 ft., and covered with forest. It is surrounded by reefs, and the short rivers are difficult of access. There is some coal, but it is not worked. The coast-line is cultivated.

Banjak Islands.—The largest of these 66 islands is Great Banjak. They have been little explored, and the inhabitants are savages. Coco-nut palms are the chief agricultural product. The islands are reputed to be haunted.

Nias has an area of about 2,796 square miles, and is the largest island off the west coast of Sumatra, but it is almost entirely uncivilized. The population is not less than 250,000. Earthquakes are frequent and violent. The climate is good, and there are plenty of coco-nut palms on the south and south-east coasts. The existence of inferior coal and some iron, copper, and gold is reported. Landing is dangerous. The natives grow rice, maize, and sago, as well as coco-nuts. The island has lost all its valuable old forests by fire in the frequent native wars, and the new growths are of little value.

The Niassese resemble the Bataks in many respects. They have been maltreated by Europeans for centuries, and the women, who, with those of Minahasa in Celebes, share the reputation of being the best-looking in the archipelago, were always in the past much sought after as slaves. The natives are intelligent, and show industrial capacity in weaving, dyeing, and colouring mats and other materials, and working in copper. Inland the funerals of their chiefs are still accompanied with human sacrifices. Head-hunting is even now practised to some extent. Those Niassese who have emigrated to the mainland have proved capable labourers and artisans.

Batu Islands.—There are three large islands, inhabited on the coast only, and 48 small ones. Coconut palms are abundant. The islands are hilly. Two or three have excellent timber, but the natives are unwilling to do the work necessary for its exploitation.

Mentawei Islands are about 70 in number altogether. They are subject to earthquakes. Siberut, the largest, is about 57 miles long. They are very little known, especially on the western side. The natives live on coco-nuts, on the pith of the sago palm, and on fish.

Engano (*Enggano*).—This group consists of one large island and six small ones, with a total area of about 276 square miles. Engano Island, the largest, rises to 1,180 ft., and all the islands have abundant timber. The trees grow right down to the sea. As on all the other islands off the west coast of Sumatra, the production of copra is now the chief industry. The inhabitants are only a few hundreds, and their numbers have much decreased in the last fifty years.

Banka has an area of 4,446 square miles, and is covered with thick tropical vegetation, though the valuable forests of heavy timber have for the most part disappeared owing to mining and agricultural operations, and the present growths are commercially unimportant. The greatest length of the island is about 100 miles. Klabat Bay, on the north, running 19 miles into the land, is the best anchorage. The highest point of the island is only 2,300 ft., and the rivers carry little water, so that there is often scarcity of water for the tin-mines.

There are many Chinese in Banka. They do all the work of the tin-mines, and cultivate pepper in increasing quantities. The natives of Banka are miserably poor. They are afraid of the Chinese and foreigners generally, and live in semi-savage conditions, cultivating coco-nut palms, areca-nut trees, potatoes, and bananas. There is little hunting and fishing.

The native population, consisting chiefly of Malays of Sumatran ancestry, is under 100,000. The total population of the island in 1912 was about 114,000. Muntok is the capital, and had in 1905 a population of 4,699, including 155 Europeans and 1,051 Chinese. The climate of Banka is remarkably variable: the temperature reaches 100° F. (38° C.) in the shade on the plains, while in the mountains it may fall as low as 39° or 41° F. (4 or 5° C.) during the night. The island is notoriously unhealthy.

Billiton (*Blitung*) has an area of 1,860 square miles. Its population numbered 36,860 in 1905, including 2,520 Chinese, 136 Europeans, and 16 Arabs. The population is now probably about 60,000. The capital, Tanjong Pandang, in the west of the island at the mouth of a short river, the Tjarutjup, had in 1905 a population of over 23,000, including 6,135 Chinese and 88 Europeans. The highest hill in Billiton is only 1,673 ft. above sea-level. The coasts are, on the whole, low and monotonous, with many marshes. All the streams are short. As in Banka, the natives do not work in the mines. They weave mats, make pewter vessels, and export a little copra, rattans, gums, resins, wood for furniture, and tortoise-shell. Billiton is under the direct influence of the monsoons, and the climate is very damp. There are 135 small adjacent islands.

The Riouw-Lingga Archipelago consists of the Karimun, Batam, Bintang, Lingga, and Singkep groups. These islands form part of a granite prolongation of the Malay Peninsula, and are covered with undulating hills. The highest point is the peak of Lingga, which rises 4,400 ft. above the sea. Riouw, or Rio, in Bintang, the largest of the islands, is a free port, established in September 1828 to compete with Singapore; but this tardy enterprise of the Dutch was a dismal failure. The actual port, seat of a Residency, and capital of the island of Bintang, is called Tanjung Pinang, and had in 1905 a population of 4,088, including 2,408 Chinese and 128 Europeans. It is 47 miles south-east by east from Singapore.

The rivers in all the islands are insignificant. The climate of the archipelago is tempered by abundant rains and the surrounding sea. Teak, resinous trees, palms, and sugar-cane grow abundantly. Sugar-cane flourishes here better than on the mainland of Sumatra, owing to the drier soil. The total population of the archipelago is about 200,000. At Pulu Sambu, 7½ miles south-south-east from Singapore, the Bataafsche Petroleum Maatschappij has five wharves, with depths alongside varying from 12 to 30 ft. at low water.

The Riouw Residency also includes for administrative purposes the unimportant Anambas, Tambelan, and Natuna groups off the north-west coast of Borneo, which are referred to in *Dutch Borneo*, No. 84 of this series. These groups of islands are now producing considerable quantities of copra, and in 1918 the Insulinde Oliefabrieken made contracts with the natives for copra supplies, and the Japanese South Sea Trading Company were contemplating sending a 4,000-ton steamer monthly to Taremba, in the Anambas group, and to other ports, to load copra.

APPENDIX

CONVENTION BETWEEN GREAT BRITAIN AND THE NETHERLANDS, FOR THE SETTLEMENT OF THEIR MUTUAL RELATIONS IN THE ISLAND OF SUMATRA, NOVEMBER 2, 1871.

(See Hertslet, L., *A Complete Collection of Treaties*, &c., vol. xiii, p. 665.)

Art. I. Her Britannic Majesty desists from all objections against the extension of the Netherland dominion in any part of the Island of Sumatra, and consequently from the reserve in that respect contained in the notes exchanged by the Netherland and British Plenipotentiaries at the conclusion of the Treaty of the 17th of March, 1824.

II. His Majesty the King of Netherlands declares that, in the Kingdom of Siak Srie Indrapoora and its dependencies, as it is defined in the compact concluded by the Netherland-Indian Government with that Kingdom on the 1st of February 1858, the trade of British subjects and the British navigation shall continue to enjoy all the rights and advantages that are or may be granted there to the trade of Netherland subjects and to the Netherland navigation; and further, that the same assimilation shall be granted to the trade of British subjects and to the British navigation in any other native State of the Island of Sumatra, that may hereafter become dependent on the Crown of the Netherlands, provided always that British subjects conform themselves to the laws and regulations of the Netherland Government.

III. The stipulations of the preceding Article shall not interfere with the distinction established by the Netherland-Indian laws and regulations between individuals of Western and individuals of Eastern extraction, nor with the application of the stipulations of the Convention of the 27th of March, 1851.

AUTHORITIES

HISTORICAL

A full list of the principal Historical Authorities will be found in *Java*, No. 82 of this series.

ECONOMIC

British Diplomatic and Consular Reports, Annual Series :
No. 5083. *Netherlands East Indies, Trade, &c.*, 1912.
No. 5325. *Netherlands East Indies, Trade, &c.*, 1913.

Cotton Goods in the Dutch East Indies. (United States Department of Commerce, Special Agents' Series, No. 120.)

Encyclopaedie van Nederlandsch-Indië. [1st ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895–1905.]

—— [2nd ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

In- en Uitvoer, Handels-Economisch Weekblad voor Nederland en Kolonien. The Hague, 1876, &c.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.

BROWN, J. M. *The Dutch East.* London, 1914.

CABATON, A. *Les Indes néerlandaises.* Paris, 1910 (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911).

WALCOTT, A. S. *Java and her Neighbours.* New York and London, 1914.

WRIGHT, A. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Frontiers

Borneo, the second in size of the islands of the Malay Archipelago, has an area of about 290,000 square miles, of which 212,740 square miles, an area exceeding three-quarters of the whole, and seventeen times as large as Holland, belong to the Dutch. It occupies a central position, being almost equally accessible from Sumatra, Java, Celebes, the Philippines, and Singapore.

The sea is the natural frontier on three sides. On the northern side the Kapuas mountain range and its continuation north-east is the natural boundary between the Dutch possessions and the British protectorates of Sarawak and Brunei and British North Borneo. Towards the north-east it has been settled that the frontier shall coincide with the parallel 4° 10′ north latitude.

The few islands adjacent to Borneo are described below, p. 41.

(2) Surface, Coast, and River System

Surface

The backbone of the island is the Kapuas range, whose highest point in the Dutch portion is Mount Tebang (Tiban, 6,000 ft.). (In British North Borneo, Kinibalu reaches a height of over 12,000 ft.). From this range the country slopes down through an intermediate stage of hill-land to the marshy coastal plains. The mountain region, which rises to heights of 3,000-5,800 ft., includes, besides the Kapuas range, the

Müller and Schwanen mountains farther to the south. The district contains many peaks and table-mountains, which are dotted about the country either singly or in groups.

The mountainous area merges into the hilly district. The hills themselves range between 200-300 ft. in height, and extend in long spurs into the plains, in several places nearly approaching the coast.

The plains lying below the hill region are for the most part dry and flat, but gradually pass into the region of swamp, which fringes almost the entire coast.

The bulk of the country is covered with dense forest, through which the rivers are the only means of communication, save in the higher ground, where there are game-tracks.

Coast

As a rule the coast is flat and marshy, bordered with mangrove swamps, and with a background of impenetrable forest. It seldom rises many feet above the sea except where the mountains approach the shore. The sea is shallow, and reefs extend frequently a long way out to sea, especially along the southern shore, while the silt brought down by the rivers has formed many large deltas which project into the sea.

The coast is badly provided with harbours, the bays usually being wide and open, and providing little security. Such harbours as exist, of which one of the best is Balik Papan, on the east coast, are at the mouths of rivers.

For the islands off the coasts of Dutch Borneo see below, p. 41.

River System

Borneo possesses numerous rivers, many of them of considerable length. The longest in Dutch Borneo take their rise from the region of Mount Tebang. Nearly all are characterized by a rapid fall through a mountain region, in which waterfalls and rapids are common, and by the formation of deltas or channels of intersection. The rivers as a rule are tidal and navigable for a considerable distance, but few can be approached from the sea because of the sand-bars or mud-banks which form at their mouths. When the rivers are flooded they cut for themselves new ways across the loops upon their courses; these short channels are called *pintas* (or *pintassans*, also *antassans*). The old course is apt to become a cul-de-sac with one or more lakes in it; to these the name of *danau* is given. The rivers are constantly changing their courses, and navigation is very difficult.

The most important river in the west is the Kapuas (Kapoewas), the basin of which occupies the bulk of West Borneo. It rises near Mount Tebang, its length is about 714 miles (1,143 km.), and its basin occupies an area of 37,000 square miles. It has many tributaries, the largest of which is the Melawi, which joins it on the left bank at Sintang. Pontianak, the capital of West Borneo, is situated on the northernmost arm of the delta.

The Barito is second only to the Kapuas in length, and is sometimes the cause of extensive inundations. The Sampit (Mentaja) is the only large river on the south coast which is not impeded by a mud-bar at its mouth. The others are navigable for a considerable distance when the difficulties of the mouth have been surmounted. The mouths of the rivers are usually broad, but shallow, and some can be entered only at high water.

The chief rivers on the east coast are the Kutei (Ketei, Mahakkam), Berau, and Bulungan (Kayan). The delta of the Kutei projects eastward for 20 miles, and has four large navigable outlets. The Berau has a large uninhabited delta with many islands, and two principal mouths that carry vessels of 13 and 15 ft. draught at high water. The Bulungan is especially noted for its rapids, which are the most formidable in Borneo. Farther north are the Sesajap and the Sibuko.

(3) CLIMATE

Borneo has no striking variations of weather or temperature. The climate of the whole island is hot and moist. The rainfall is very great, and there is, strictly speaking, no dry season. Rain falls in every month of the year, even in the driest years; and no month is recorded as having on an average less than five rain-days. The island is under the influence of the monsoons: north of the Equator the south-west monsoon blows from April to October, and the north-east from November to March; south of the Equator the monsoons for these periods are respectively south-east and north-west. The transitions are marked by variable winds.

On the coast the climate is comparatively healthy, the temperature rising from 72° F. (22° C.) at sunrise to 90° F. (32° C.) or 92° F. (33° C.) at 3 p.m., while at sunset it is about 82° F. (28° C.), but the nights are damp. Inland the climate is far harder to support, and the temperature is higher, except on the mountains.

The average rainfall at Banjermasin is 96·2 in. (244 cm.), the rainiest months being December and January; at Balik Papan the average rainfall is 92·1 in. (234 cm.), the rainiest month being December; at Pontianak the average rainfall is 129 in. (327 cm.), the rainiest months being October and November. In these places September is usually the driest month. This enormous rainfall, coupled with the abundant rivers, dense forests, and numerous swamps, produces excessive humidity.

(4) SANITARY CONDITIONS

The conditions of climate prevent the island from being very healthy, though it is probably healthier than New Guinea and parts of Sumatra. Dysentery is rife, probably owing to the bad river water, and malaria is prevalent because of the position of the settlements, which are either near mangrove swamps or upon rivers in low country. Among the natives skin diseases resembling leprosy are found; beri-beri appears at times, and there are occasional visitations of cholera in the coast towns. Smallpox has committed great ravages, but vaccination has practically stamped it out. Ophthalmia is common, and elephantiasis is frequently met with on the coast. Pontianak is said to have a healthy climate, but suffers from lack of good drinking water. The reputation of Banjermasin for health is very bad. The most unhealthy time of the year is October and early November, when travellers are especially liable to fever.

(5) RACE AND LANGUAGE

Race

There are no traces left of the original Negrito race. which, judging by the analogy of neighbouring islands, once occupied Borneo. The present inhabitants are divided into Dayaks (Dyaks or Dajaks), an Indonesian people, who probably represent a pre-Malayan invasion and have been pressed into the interior of Dutch Borneo, and the Malays and other settlers, who live along the coast and have their settlements up the course of many of the rivers. The name Dayak, however, is now used for the pagan inhabitants of the interior, Malay for the Mohammedans who dwell mainly on the coast. The difference between the Dayaks and Malays is social and religious rather than racial; they differ little from one another, save that the Dayaks are somewhat taller, lighter in colour, and more active. There is much intermarriage between Dayaks and Malays, the children of such unions being always reckoned as Malay and Mohammedan; and when a Dayak becomes converted to Islam he calls himself Malay. The Malays treat the Dayaks with contempt.

The Dayaks may be divided into four groups: (1) the Kayans, who live in the centre of the island, and comprise, besides the Kayans proper, the Bahaus, the

Kenyas, and the Kinyins; (2) the Ulu-Ngaju, who live in the south-east; (3) the numerous tribes of the west, who have no general name; (4) the nomadic tribes scattered over the island, of whom the best known are the Punans.

The Dayaks of the interior are, as a rule, nomadic. Sometimes, however, they occupy villages of a permanent character, which then often consist of one long house accommodating twenty families or more.

Of the Dayak tribes the finest people physically are the Kenyas, but the Kayans are the most skilled in handicraft.

The length of time the Malays have been in Borneo is unknown; their own traditions represent them as established there for more than 600 years. They have no tribal organization like the Dayaks. In the south they have absorbed the Javanese, of whom there were at one time probably a considerable number.

Along the east coast and at a few points on the west coast are many Bugis or Buginese, who have come from Celebes. A large number of Chinese have been attracted to the west of the island by the search for gold, and are chiefly found in the district between Pontianak and the frontier of Sarawak, although in many places they have penetrated far into the interior.

There are about 3,000 Arabs in Dutch Borneo, many of whom have been settled for a long time; and during the last half-century natives of India, most of whom are Klings from Madras, have established themselves in the small trades of the towns.

Language

Tribe is parted so much from tribe by impenetrable forests that differences of language become emphasized,[1] and the residents in villages (*kampongs*) geographically near one another are mutually unintelligible. Most Dayaks know two or three tongues, the language of the Ngaju Dayaks being the most generally spoken. Since the recent spread of trade, a simplified form of Malay has been rapidly establishing itself as a *lingua franca.* None of the Dayak tribes has evolved a script of its own.

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[1] It has been stated that the language of Mendalum-Kayans is generally understood over a considerable part of the interior. Dr. A. W. Nieuwenhuis, *In Centraal Borneo*.

(6) POPULATION

Distribution

The last census in Dutch Borneo was taken in 1905. It could not be complete, as so much of the country is unknown; and some authorities think that the real numbers would be found greatly in excess of the official figures. There is also an official estimate for 1913. In West Borneo the numbers were estimated in 1913 at 467,000; in South and East Borneo at 905,000. The total is 1,372,000, an increase of 140,000 over the census figures of 1905, the great increase being due to the large immigration of Chinese into South and East Borneo. The details of these numbers are as follows:—(1) West Borneo: natives, 411,912; Europeans, 349; Chinese, 52,957; Arabs, 1,306; other foreign Orientals, 638; (2) South and East Borneo: natives, 816,093; Europeans, 782; Chinese, 85,790; Arabs, 2,432; other foreign Orientals, 204.

The people are mostly settled on the big rivers and their tributaries, separated in the interior by uninhabited stretches of forest. The bulk of Dutch Borneo is accordingly very sparsely populated; on the basis of the taxation figures the greater part has only two or three people to the square mile. The principal settlements are at the harbours in the valleys of the Negara and Martapura, and in the district between Sambas and Pontianak; but even there the population seldom rises above 40 or 50 per square mile.

Towns and Villages

West Borneo.—The chief town is Pontianak (population in 1905, 20,984), the Residency capital, which lies at the north of the delta of the Kapuas. The houses are raised above the water on piles, a great part of the town being under water at each high tide.

Other important towns are Sambas (12,096), which is situated near the gold mines Mampawa or Mempawah (3,389), Tajan (1,452), Sintang, and Montrado.

South and East Borneo.—Banjermasin (population in 1905, 16,708; with the neighbourhood, between 40,000 and 50,000), the Residency capital, is one of the oldest trading ports of Borneo, and is of more importance than Pontianak, owing to its extensive coastal trade.

Other towns are Balik Papan (8,200), the centre of the petroleum industry, Tengarung or Tenggarong (6,000), Samarinda (4,733), Martapura (4,000, with the neighbourhood, 9,000), Sampit (about 4,000), and Pasir.

Movement

There are no available figures showing the increase and decrease of the population. The Dayaks, however, do not increase rapidly, this fact being largely due to the practice of head-hunting (though this has been checked to a certain extent during recent years), to a very low birth-rate, and to a high death-rate, caused by the prevalence of dysentery and fevers.

II. POLITICAL HISTORY

Chronological Summary

1600	Dutch expedition touches at Brunei, in the north.
1606	Relations opened at Banjermasin, in the south; relinquished 1669.
1609	Factory built at Sambas, in the north-west; abandoned 1623.
1635	Dutch relations with Kutei (Coti) in the east.
1711	Factory opened at Banjermasin.
1771	Factories opened at Pontianak and Mampawa, in the west; abandoned 1791.
1787	Banjermasin ceded to the East India Company; abandoned 1809.
1812	Banjermasin recognizes English supremacy.
1816	Holland regains her interests in Borneo.
1824	All the west coast under the Dutch flag.
1826	Extensive acquisition of Banjermasin territory by the Dutch in the south and east.
1839	Establishment of British influence in the north.
1841	Sir James Brooke appointed Rajah of Sarawak.
1844	Kutei acknowledges Dutch sovereignty.
1850-56	Expedition against rebellious Chinese miners' associations.
1859	Abolition of the Sultanate of Banjermasin.
1882	British North Borneo Company founded
1888	British protectorate over the north.
1891	Boundary treaty between Holland and Great Britain.

Early History.—The first Europeans to land in Borneo were the Portuguese, who discovered the island in 1521, and opened commercial relations with the natives. In 1600 a Dutch expedition under Olivier van Noort touched at Brunei, on the north-west shore of Borneo: and in 1609 the Dutch East India Company entered into an agreement with the ruler of Sambas, on the west coast, and built a factory there, which was abandoned in 1623. Relations were not resumed until after the establishment of the State of Pontianak in 1771 by the Arab chieftain, Abdur Rahman, when factories were again opened by the company, this time at Pontianak and Mampawa; but these were abandoned in 1791.

Temporary relations had also existed between 1606 and 1669 with the State of Banjermasin, in the south: they were resumed early in the eighteenth century, and factories were set up, one in the town of Banjermasin itself in 1711, and one on Tatas Island in 1747; to protect the trade a fort was erected at Tabanio. In 1787 the Sultan ceded the whole of his State to the Dutch East India Company; but in 1809 the factories, yielding no profits, were abandoned by Daendels, Governor-General of Java, and for a while European influence was entirely absent from Borneo. In 1812 the Sultan of Banjermasin was induced to recognize the supremacy of England, at that moment mistress of the East Indian Archipelago, but Dutch interests in Borneo were restored to Holland in 1816.

Dutch Rule.—The States on the west coast, incessantly pestered by pirates and the Chinese, gladly accepted Dutch overlordship; and by 1824 the whole of the west was under the Netherland flag. Piracy, however, continued, being encouraged by the avaricious Malay rulers; and in 1828 the Sultan of Mattang and Simpang was deposed and a Siak prince set up in his stead.

Dutch influence also gradually reasserted itself in the south, and in 1826 was recognized in a contract by which the Sultan of Banjermasin ceded to Holland important possessions on the east coast of Borneo, with an extensive district inland, and acknowledged her right to appoint a successor to the throne and an administrator of the State. But Dutch interference in the succession eventually caused much friction, intrigue, and revolt; and in 1859 Holland decided to abolish the Sultanate and to declare the State Dutch territory. The embers of revolt smouldered for many years, and were not finally extinguished until 1886.

Although an expedition from the Netherlands had visited the State of Kutei (or Coti) on the east coast so early as 1635, and there had occasionally been intercourse with that territory by way of Banjermasin, it was not until 1844 that an agreement was made with the Sultan whereby the latter acknowledged the sovereignty of the Netherlands. In 1846 the first Assistant Resident was appointed; and in 1850 a new agreement was made, followed by that of 1863, which is still in force. The State of Kutei rendered valuable aid to the Netherlands during the war in Achin (Sumatra).

Chinese have been settled in Borneo for hundreds of years, and in the eighteenth century there was considerable immigration owing to the discovery of new goldfields. The Chinese established a federated republic. formed by the union of their various local associations *(kongsis)*, in the Montrado district, where they resisted the authority of the Dutch Government, which consequently sent military expeditions against them. Fighting continued from 1850 to 1856; and it was not till 1884 that the last *kongsi* ceased to exist as a political organization.

British Relations.—The British East India Company traded with Banjermasin so early as 1614, and founded a factory there in 1703. In 1706 a fort was built, but in the following year the Chinese drove out the British. Trade was resumed by British ships in 1737, cargoes of pepper being called for at intervals. The establishment of British power in Borneo was brought about by Sir James Brooke in 1839, as a result of the assistance he lent to the Sultan of Brunei against the Dayaks of Sarawak.

Sarawak.—Sir James Brooke was first appointed Rajah of Sarawak in 1841 as vassal of the Sultan of Brunei, and was subsequently recognized as independent under the nominal suzerainty of the Sultan. He established order and safety and a regular administration throughout Sarawak, and put down piracy with the assistance of English naval vessels. In 1846 he obtained for England the island of Labuan, at the mouth of Brunei River, which became an important coaling station.

Rajah Brooke visited England in 1847, when he received a baronetcy, and was appointed Governor of Labuan and Consul-General. He subsequently carried out a vigorous campaign against the pirates of Seriboes and Sekaran, in connection with which he was accused in the British Parliament of unnecessary severity. He defended himself vigorously against these attacks, but was relieved of his office as Consul-General.

Brooke again went to England in 1858, leaving the administration of Sarawak in the hands of his nephew, Captain Brooke. On his return to Sarawak in 1862 his nephew took up a hostile attitude towards him, but this led to no active results; and, after Sir James's death in 1868, another nephew, Charles Johnson, became Rajah of Sarawak under the name of Sir Charles Brooke. He was succeeded in 1917 by his son, Charles Vyner Brooke. Meanwhile an English syndicate had been busy acquiring interests in North Borneo; and, a Royal Charter having been granted on November 1, 1881, the British North Borneo Company was formed in May 1882; the Company proceeded to organize the administration of certain large territories which had been acquired and which were subsequently added to.

In 1888 the British Government proclaimed a formal protectorate over the States of Sarawak, Brunei, and British North Borneo; whereupon negotiations regarding the boundary were instituted between the Netherlands and Great Britain, and a treaty was signed in London on June 20, 1891.[1]

The subsequent history of Dutch Borneo consists mainly of a series of exploring expeditions and the establishment of the petroleum industry in East Borneo. Dutch rule has been peaceful.

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[1] See (*a*) Hertslet, *Complete Collection of Treaties, &c.*, vol. XIX, p. 755; (*b*) *Verslag der Commissie tot uitzetting op het terrein van de tusschen het Nederlandsche gebied en Britsch Noord-Borneo vastgestelde grens*, Batavia, 1913; (*c*) *Indisch Staatsblad*, 1916, No. 145.

III. SOCIAL AND POLITICAL CONDITIONS

(1) Religious

Dayaks form the great bulk of the population, and mostly believe in a supreme creative God, of whom, however, they think far less than of the evil spirits which they believe to people all space. Priest-sorcerers, who propitiate these spirits by sacrifice, control the lives of the people. The head-hunting for which Dayaks are notorious is primarily ritualistic in its object. They seek to obtain the soul of the dead man as a protector of the slayer and his village. The heads are dried, cleaned, and ornamented with flowers, and treated with great reverence. When feasting, the Dayaks offer to these heads the choicest morsels of every dish, as well as betel-nuts and other luxuries. The practice of head-hunting is, however, tending to disappear under European influence; and the head required for funeral ceremonies or as a bride-gift is not now always a new one, but can be borrowed for the occasion.

Mohammedanism is making far more progress among the Dayaks than Christianity. The Malay settlers are all Mohammedan, though often somewhat unorthodox, even as compared with the Mohammedans of Java.

There are believed to be about 7,000 Christianised Dayaks; the Capuchin Fathers work in West Borneo, Protestant missions in south and east, but no great success has marked their labours.

(2) Political

The civil administration in Borneo, as throughout the Dutch East Indies, rests upon the principle of leaving the native population as much as possible under the immediate control of their own chiefs, who are appointed or recognized by the Government, and are subject to such supervision as may be decreed by the Governor-General or arranged by treaty with the respective rulers.

For administrative purposes Dutch Borneo is divided into two Residencies—(1) West Borneo; (2) South and East Borneo, the capitals of which are respectively Pontianak and Banjermasin. Only portions of these great areas are under direct Government administration; there are several recognized native rulers in each Residency.[1]

(3) EDUCATIONAL

Education is necessarily extremely backward. There is a Fröbel School at Banjermasin for European children, and also a Protestant missionary training college. The Government maintains 28 schools in Borneo, viz., one first-class school at Banjermasin, one school for children of prosperous natives at Sambas, six second-class schools in West Borneo, and twenty second-class schools in South and East Borneo. There are also seven subsidized schools in West Borneo classed as "private," and 88 in South and East Borneo. Until quite recently the Dutch were strongly opposed to the acquisition by the natives of the Dutch language, but this prejudice is being gradually discarded.

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[1] General observations bearing on this section will be found in *Java* and *Sumatra*, Nos. 82 and 83 of this Series.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) Internal

(*a*) *Roads*

Dutch Borneo[1] is ill-supplied with roads. It was not till 1908 that the Government of the Dutch East Indies established a service for the inspection of the roads in the Outer Possessions (i.e., all the islands except Java and Madura). Much of the interior of Dutch Borneo is still unexplored and covered by dense forests, but there is a military road round the coast from Samarinda in the east to Sambas in the extreme north-west, and in 1914 plans were in preparation for the construction of many new roads. A mountain-road from Long Iram on the Upper Mahakkam to the Bulungan Valley appears to be the latest enterprise of importance.

Statute labour can still in some districts be requisitioned for road-making. Convict labour is extensively employed on the roads of West Borneo. In some towns steam-rollers are used and macadamized roads have been constructed. Strict regulations are enforced to prevent damage to roads by native carts with narrow-rimmed wheels.

According to an official abstract compiled in 1903, containing the latest precise statistics available, there were then in West Borneo 196 miles of third-class roads, and in South and East Borneo 4½ miles of second-class roads and 512 miles of third-class roads. In West Borneo there were no arched bridges, but 152 bridges of bamboo, &c. In South and East Borneo, where 58 bridges were constructed or reconstructed between 1896 and 1903, there was one bridge with arches and 925 of bamboo, &c. The figures for South and East Borneo took no account of roads and bridges under direct military control. Rope ferries are largely used. In the forests natives make roads of tree trunks laid side by side. They are durable, but very slippery and uneven.

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[1] For adjacent islands, see below, p. 41.

The provision of an adequate road system is among the most urgent needs of Dutch Borneo, since only by this means can progress be made with the clearing of the forests. Rotting vegetation is the curse of the island, and if the forests could be reduced sanitary conditions might be expected to improve.

(*b*) *Rivers*

The rivers afford the chief means of communication in Dutch Borneo. The bulk of the population lives upon their banks, and their commercial importance may generally be deduced from the relative prosperity of the settlements that have grown up.

The enormous rainfall in Borneo causes immense quantities of earth and vegetation to be brought down the rivers, with the result that most of them are inaccessible for large vessels on account of the mud-banks formed at their mouths. On the east and west coasts large deltas are formed, but on the south coast the currents of the Java Sea to some extent clear away the accumulations. The beds even of the largest rivers are impeded by islands and promontories, called *karangans*, formed by sand, mud, and stones deposited in times of flood. The rivers frequently change their courses, and the abandoned beds become chains of lakes closed at the lower end. Only by vast expenditure on canalization could most of the rivers be made available for regular steamer traffic.

The three principal rivers, in order of importance, are the Kapuas, in West Borneo; the Barito, in South

Borneo; and the Kutei, in East Borneo. The Dutch measure of distance on these is an *uur* (hour), equivalent to 5,653 metres, or about 3½ English statute miles.

The *Kapuas* has a number of mouths, a few miles up the northernmost of which is Pontianak, the Residency capital. About 300 miles up-stream, at Sintang, where the Melawi joins the main stream, the river is half-a-mile wide when in flood, but the level of the water falls as much as 30 ft. in the dry season. The river is tidal as far as Tajan, about a hundred miles up-stream from Pontianak. It is navigable by steamers drawing 3 ft. as far as Putus Sibau, 902 km. from the mouth, except when the river is at its lowest. At that point the river has a breadth of nearly 700 ft. for most of the year. In 1911 the Government established a transport service between Pontianak and Sintang, which is maintained regularly when the state of the river permits. This was originally intended only for officials and the transport of goods and mails, but private persons are now allowed to make use of it. Houseboats towed by tugs are used, and the journey occupies three to four days. In 1914 52 voyages were made and 2,062 passengers carried; in 1915 there were 31 voyages, with 1,621 passengers. But in 1914 the total number of nautical miles traversed by Government vessels was only 11,636, as compared with 15,727 in 1915, the greater volume of water in the latter year allowing much longer voyages to be made. Many other tugs, belonging mostly to Chinese, ply on the Kapuas to Sintang and beyond, towing *praus*.

The *Barito*, the most important of the many rivers of South Borneo, has a basin of about 40,000 square miles, or more than three times the area of the Netherlands. Its navigation is restricted by cataracts, but its eastern tributary, the *Martapura*, is navigable by steamers up to the town of the same name, some 50 miles above the junction. On the Martapura, immediately above its confluence with the Barito, is Banjermasin, the Residency capital, and the largest town in Dutch

Borneo. The *Negara River*, another and smaller tributary of the Barito, is remarkably clear for navigation.

In East Borneo the *Kutei* (*Ketei*) or *Mahakkam* River has an extensive delta projecting into the sea, but large steamers can reach Tengarung, 60 miles from the coast, while small tugs can proceed 250 miles upstream. Samarinda, a short distance above the delta, is the chief port of the Kutei basin, and is rapidly growing in importance.

A few of the less important rivers deserve passing mention. In the west the only stream besides the Kapuas which is navigable by steamers is the *Sambas,* which rises near the confines of Sarawak. It was formerly notorious for pirates, who lurked under its banks and ravaged the seas between Borneo and Singapore. Vessels of 25-ft. draught can reach Sambas town, which lies 40 miles from the sea on the tributary called the *Little Sambas.*

Several of the rivers of South and East Borneo are at certain seasons navigable by steamers for considerable distances; but their mouths, though wide, are as a rule shallow. In the south the *Mentaja* or *Sampit* flows into Sampit Bay. Its mouth, which is 1,100 ft. wide, is relatively unobstructed. In the north-east, about 100 miles south of British territory, the *Bulungan* or *Kayan* is navigable by steamers up to Tanjung Selor, above which there are rapids. Farther north the *Sesajap* is navigable by small craft for more than 50 miles, and the *Sibuko* for 46 miles, the latter river being navigable by ocean-going vessels for 15 miles from its mouth. Balik Papan, a settlement formed a few years ago at the mouth of a small stream in East Borneo, is almost the only town which does not owe its importance to river communication. Its prosperity is due to the neighbouring petroleum fields, the oil of which is conducted through pipes to the town.

(*c*) *Railways*

There are no railways upon the mainland of Dutch Borneo. Plans for a steam-tram service from Banjermasin to Martapura, Rantau, and Tanjung, all on tributaries of the Barito, have not yet been carried out. On the island of Pulu Laut, off the south-east coast, there is a line three miles long which brings down coal from the Government mines to the coaling station at Stagen, and there is a similar short tram-line at Balik Papan.

(*d*) *Posts and Telegraphs*

There were 30 post offices in Dutch Borneo in 1914. Mails are carried by Government vessels on the Kapuas and Barito Rivers, and Banjermasin, Balik Papan, and Pontianak are in regular steamship communication with Surabaya, Batavia, and Singapore. Inland no organized postal service exists away from the navigable rivers, but the Government can requisition natives to carry mails in some parts of South and East Borneo.

There are few telegraphic connections in Dutch Borneo, the total length of wire in 1914 being a little less than 590 miles, but plans for an extensive system have been prepared. The principal land-line is between Banjermasin and Balik Papan. There are telephone systems at Pontianak and Banjermasin. Private telephones have been installed at Balik Papan and elsewhere.

(2) EXTERNAL

(*a*) *Ports*

Most of the ports of Dutch Borneo have been already mentioned in connection with the rivers on which they lie, for nearly all are river ports. This is a serious disadvantage in some respects. Thus both at Pontianak, the approach to which is marked by a lighthouse, and at Banjermasin the channels are uncertain, and the towns are a long way from the sea. Samarinda, too, is some distance up-stream and difficult of approach. Sambas is easy of approach, but of little importance, as the region it serves is not productive. Mampawa, north of Pontianak, is quite a small place at the mouth of the river of the same name. On the east coast Pasir, on the Kendilo River, Tanjung Redeb, on the Berau River, and Tanjung Selor, on the Kayan or Bulungan River, are growing ports, all some distance up-stream.

The only ports of Dutch Borneo with quays at which ocean-going steamers can lie are Balik Papan, in the east, and Stagen, on the island of Pulu Laut. At the former there is a British Vice-Consulate; there is always good depth of water, and the landing-places are accessible at all states of the tide.

The harbour of Stagen is completely sheltered against wind and sea at all seasons. The entrance from the north is absolutely safe, with 30 ft. of water at the lowest spring tide. The southern entrance can only be used by steamers of not more than 17 ft. draught. Both entrances are well marked by lights and buoys. In the harbour are two coaling wharves of the Government mines, with a minimum depth of water alongside of 23 and 25 ft. respectively. The bottom is mud. The wharves are served by a mechanical coal transporter (steam tip), with an average capacity of 100 tons an hour, and a steam pump for water. There is a mooring buoy at each end of the tip wharf. Some 20,000 tons of coal can be stored, most of it under cover. Bunker coal of good quality can be supplied at any time, and coaling can continue night and day. There are no harbour dues for steamers calling for bunkers, and no tolls are exacted.

The island of Pulu Laut has another good harbour in Kota Baru, a town in the north, which in 1905 had a population of 1,668, including 531 Chinese and 13 Europeans.

With respect to the volume of trade dealt with, Balik Papan is by far the most important of the ports. Next in order come Pontianak, Banjermasin, Tanjung Selor, and Samarinda, followed by Kota Baru, Sambas, and Pamangkat.

The pre-eminence of Balik Papan, which is largely due to the petroleum industry, is clearly shown by the following statistics, in cubic metres, of the shipping entering the chief ports of Borneo in 1913:—

Balik Papan	1,853,893
Stagen	983,422
Samarinda	884,395
Banjermasin	602,492
Kota Baru	404,820
Pontianak	275,835

(*b*) *Shipping Lines*

The Koninklijke Paketvaart Maatschappij is under contract with the Colonial Government to maintain regular services between Java and the principal ports of Dutch Borneo. The present contract runs for ten years from January 1, 1916, and comprises 30 steamer services, covering all the islands of the Dutch East Indies. There are fortnightly services from Batavia to Pontianak, and from Surabaya to Banjermasin (260 miles), Kota Baru, and Samarinda. There is a monthly service from Surabaya to Banjermasin *via* Bawean Island. There is also a fortnightly service between Singapore and Pontianak (350 miles), and there are monthly services from Pontianak to Sambas, from Banjermasin to Berau, and from Banjermasin to Bulungan (Tanjung Selor). The company actually maintains a service every four days between Pontianak and Singapore, and a weekly service from Singapore to Banjermasin (*via* Surabaya in alternate weeks), and also a fortnightly service between Macassar and Samarinda. About every 20 days there is a Chinese service from Singapore to Surabaya, Banjermasin, Kota Baru, Samarinda and back. Before the war the Norddeutscher Lloyd maintained services to Pontianak and Banjermasin.

The Nederlandsch-Indische Tankstoomboot Maatschappij of Batavia, the Bataafsche Petroleum Maatschappij, and the Anglo-Saxon Petroleum Company of London maintain constant services between

Singapore and Balik Papan. Many of these oil vessels are of between 3,000 and 5,000 tons.

The Nederlandsch-Indische Bosch Producten Maatschappij has a small vessel running twice monthly from Banjermasin on coastwise trips, and Sambas is in regular communication with Pontianak. A large number of vessels owned by Chinese also engage in coasting trade.

(c) *Cable and Wireless Communication*

From Pontianak there is a French cable to Saigon, now probably abandoned, and also a Dutch cable to Batavia. From Banjermasin there is a Dutch cable to Landangan, in East Java. From Balik Papan there are Dutch cables to Surabaya, to Macassar, and to Kwandang and Menado.

The Bataafsche Petroleum Maatschappij has its own wireless installations at Balik Papan and Tarakan Island, and is allowed to exchange messages with the vessels of the Koninklijke Paketvaart Maatschappij. There is another installation on St. Barbe Island, halfway between Pontianak and Singapore.

(B) INDUSTRY

(1) Labour

The development of Dutch Borneo has been greatly hampered by lack of labour. Statute labour can be exacted by the Government in South and East Borneo for the construction, repair and maintenance of roads and waterways, bridges, dykes, guard-houses, and travellers' shelters (*pasang-grahans*), and also for the transport of Government goods and of officials and their baggage. The system of instituting a poll-tax for the obligation to perform statute labour is gradually being introduced in South and East Borneo.

In South and East Borneo statute labour can also be requisitioned for the construction, repair, and maintenance of military works, if free labour cannot be obtained, but the rate of payment must be the same as the local rate for free labour. The maximum number of days of statute labour which can be demanded from any native in South and East Borneo is 26 per annum.

In West Borneo statute labour cannot be exacted from natives except to avert "catastrophes or public dangers." But in the division of Montrado, formerly rebellious, the Chinese can still be compelled to render "personal services."

Separate figures for Borneo are not available, but the aggregate of statute service "labour days" demanded and rendered in 1914 in the whole of the Outer Possessions was 24,695,331, while the number which could have been legally exacted was 48,870,000.

There are at least 150,000 Chinese in Borneo, great numbers having come to South and East Borneo since the census of 1905, which estimated the Chinese population of that Residency at 7,174, and the Chinese in West Borneo at 48,348. Besides controlling nearly all the wholesale and retail trade, as in most parts of the Dutch East Indies, the Chinese in Borneo have applied themselves industriously to land cultivation, and in most parts of the island their labour is the best available.

The Dayaks, who form the bulk of the population, have not yet become accustomed to steady labour of any description.

They have, indeed, little inducement to be energetic. By two or three days' labour they can obtain from the sago-palm a quantity of pith sufficient, when pressed into cakes, to supply food for a year. Beyond this their wants are few, and equally easy to supply, for game and fish alike abound. The Sea Dayaks are fairly energetic fishermen. Those in the interior hunt a great deal, especially wild deer, using snares and traps, but also spears, bows, and blow-pipes. They collect wild beeswax and grow tobacco. They also cultivate a few fields of rice, maize, and sweet potatoes. Fruit and vegetables are plentiful.

There are a few thousand Arabs in Dutch Borneo; but, like the Bugis from Celebes, who have settled on the east coast, they are mainly engaged in retail trade. A few Klings from Madras work on the plantations, but they are more often traders.

On February 1, 1913, there were in West Borneo 388 contract coolies (see *Sumatra*, No. 83 of this series), including 198 Javanese men and 97 Javanese women. There were in South and East Borneo on October 3, 1912, 8,258 contract coolies, including 6,153 Javanese men, 618 Javanese women, and 1,201 Chinese.

(2) AGRICULTURE

Dutch Borneo is a land of great possibilities, and in fertility of soil is the equal of Java and Sumatra, but as yet it has had no opportunity of developing its agricultural resources. It is estimated that four-fifths of the surface, or some 180,000 square miles, are covered with dense forest or jungle, while the total population of the country does not exceed 2,000,000.

(*a*) *Products of Commercial Value*

The principal cereal crop is *rice*, of which, however, little is cultivated on the "wet" system. In South and East Borneo (with the exception of the upper Kutei district) the Government levies a 10 per cent. tax on the value of the crop, estimated at the average price in the preceding three years. Government servants, chiefs, and missionaries are allowed 500 *gantangs* (over three tons) free of tax. In 1913 West Borneo exported 450 tons of rice, and imported 15,626; South and East Borneo exported 189 and imported 27,498.

Sugar, *coffee*, and *tobacco* are grown by Dutch planters; *gambier* and *pepper* by the Chinese. The *coco-palm* is cultivated on the coast and along the rivers. Gums and resins, timber, rubber, and copra, obtained by the natives from the interior, are brought down the rivers in praus.

The most important vegetable product is *rubber*, which is obtained wild from the forests, while plantations are now being energetically exploited, especially in the neighbourhood of Banjermasin and Pontianak, where large areas have been planted, mostly with *Hevea brasiliensis*, but in some cases with *Ficus elastica*. In 1912 the Sungei Putat Estate, near Pontianak, had 123,000 trees, planted partly in conjunction with coffee. This estate belongs to the Pontianak Rubber Maatschappij of Amsterdam, controlled by the Pontianak Rubber Estate, Limited, London.

On June 1, 1914, the total area under rubber cultivation in Dutch Borneo was 4,962 *bouws* (8,683 acres),[1] distributed thus :—

West Borneo (7 estates)—

	Hevea alone. Bouws.	*With coffee.* Bouws.	Total. Bouws.
Rubber	2,031 ..	36 ..	2,067

South and East Borneo (7 estates)—

	Hevea alone.	*Ficus.*	
Rubber	1,681·5 ..	1,213·5 ..	2,895
		Grand Total ..	4,962

On the same date there were three estates in West Borneo planted with coffee alone, besides 36 *bouws* planted with coffee and rubber mixed. Scientific cultivation, called "European," but not necessarily under European control, is in Dutch Borneo mainly devoted to rubber, coco-palms, and rattan.

Borneo is rich in fruit. The mango is so common as to have given its Malay name (*Klementan*) to the island, which is also famous for mangosteen and durian. Other fruits found are the jack, rambutan, lansat, many varieties of banana, yam, melon, and pineapple.

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[1] Reckoning the *bouw* as 1¾ acres.

Livestock—Domestic animals are few. The Dayaks keep pigs. Cattle are not much bred, though some buffaloes are reared for transport. Horses have been introduced to some extent in the south-east. Other importations are the goat, the dog, the cat, and the domestic fowl. At the end of 1914 there were in West Borneo 218 horses, 538 buffaloes, and 10,384 steers, cows, &c., and in South and East Borneo 1,388 horses, 16,376 buffaloes, and 11,514 steers, cows, &c.

In the absence of larger beasts of prey game abounds, both deer and wild swine being common. An animal of some commercial importance is the civet-cat, from which civet is obtained; it has several congeners. Birds also are numerous; there are several kinds of pheasants, also partridges, snipe, plovers, orioles, and pigeons. One important bird is a kind of swift (*Collocalia linchi*), whose nests, found in the limestone caves of the coast, are much appreciated as food both by natives and Chinese, and are exported extensively to China.

(*b*) *Forestry*

The forests of Borneo are as yet almost entirely unexploited. They contain some 500 species of trees, many of which produce good timber, the bilian, or ironwood, being particularly valuable. Bamboo and rattan are of great importance in native life, as also are the nipa-palm, the leaves of which provide the material with which native houses are roofed, and the nibung-palm, which is used for building. Of the palms, however, the most important economically are the sago-palms (*Metroxylon rumphii, M. leve*, and *M. sagus*), which afford the greater part of the food of the natives; the betelnut-palm (*Areca catechu*); and the coco-palm. The camphor tree (*Dryobalanops camphora*) also deserves mention. The potential value of the forests is incalculable; but at present, in conjunction with the enormous rainfall, they render the whole island unhealthy, and prevent any approach to prosperity. In most places the soil is covered with masses of decomposing vegetation, and the innumerable swamps, both inland and on the coast, breed fevers and induce the inertia which has caused the Dayaks to be rightly regarded as one of the idlest races of mankind.

(3) Fisheries

The shallow seas surrounding Borneo, and the numerous rivers, lakes, and marshes of the interior, provide a great variety of fish; but though the natives consume much, both fresh and dried, they do not in general practise fishing as an industry. Nevertheless, in 1914 about 2,000 tons of dried and salted fish were exported from South and East Borneo, obtained mainly from the large lakes of the Kutei River and the swamps in the basin of the Negara. There are pearl fisheries on the east coast, both in the Strait of Macassar and the Sea of Celebes.

(4) Minerals

Borneo is, without doubt, richer in minerals than any other island of the Dutch East Indies. Gold and silver are found in many districts, and diamonds occur here only among the islands of the archipelago. Platinum exists at Martapura and lead at Bukit Pondok, while iron ores are worked by the natives, both in the west and south-east. Copper, antimony, zinc, bismuth, mercury, and arsenic are also known to occur, but so far there has been no export of these metals on any considerable scale. As in the case of agriculture, the dearth of labour has prevented development of the natural resources of the country. When this difficulty is overcome, and fresh capital and more scientific methods are introduced, mines in Dutch Borneo will doubtless make large profits.

Diamonds.—It is said that at the end of the eighteenth century diamonds to the annual value of £90,000 were being found in Borneo, and for long the island had the reputation of producing the finest stones in the world. The largest diamond found there in recent times came from Gunung Lawak, near Martapura, and weighed 77 carats. Digging licences in the Martapura district are granted by the Government at the rate of one florin a month. The digging may only take place in areas not included in any mining concession. In 1913 there were granted 8,120 licences for diamond-digging, and about 1,590 carats, valued at 66,807 florins, were found; in 1914 about 1,258 carats were found, valued at 48,762 florins.

The diamonds occur chiefly in the west, where there is a band of igneous intrusions and exposures north of the Lower Kapuas and the Landak, and in the south-east, where the rocks from Martapura eastwards are highly metamorphosed. Diamonds are also found sparsely scattered over a broad belt joining the two main areas. The diamond beds always contain gold as well.

Gold occurs both in veins and in gravels, and is widely distributed, but most thickly in the western extremity and the south-eastern corner; it is also found irregularly scattered over the southern half of the island in recent deposits. Thus there is diluvial gold at Sintang, traces in the disintegrated rocks along the Kapuas, and alluvial gold over a large area in the Embahu basin, near Mount Kelim, and in the Serewai district. These indications may point the way for scientific prospecting. At present many of the richest placers appear to be exhausted, and the lodes still being worked are barely profitable.

The Chinese have been washing gold in Borneo for seven centuries. The gold they obtained in 1848 in West Borneo was officially valued at 1,348,810 florins (£112,400), and in the same year they obtained about £5,000 worth on the Martapura. Between 1875 and 1880 the official figures were never less than £100,000 a year. There is reason to believe that the Chinese really obtained far more gold than was disclosed. It was clearly to their interest to keep down the figures, since not only was every ounce taxed, but there was the constant fear, which proved to be justified, that the competition of Europeans would be attracted.

In 1897 a gold mining boom began in the Dutch East Indies, and about forty companies were started with an aggregate capital of close on a million pounds sterling. Many of these enterprises were in Borneo, and most of them failed miserably through inadequate capitalization and lack of experience on the part of the directors. The Kahajan Mijnbouw Maatschappij, formed in 1897 with a capital of 2,000,000 florins to seek gold in the Dayak lands of Borneo, is still working the Kahajan lodes, but has not yet paid a dividend, mainly owing to difficulties of labour and transport.

Silver is usually found in conjunction with gold, but is not extensively produced. The output in 1907 was about 3,000 kilogrammes.

Coal.—Dutch Borneo is rich in coal, which is found, though not worked, in all parts of the island. Though occurring in great quantities, much of it is of late formation and at present of no technical value. The Government mines near Martapura were abandoned in 1884 because the quality was not good, and labour was deficient. In West Borneo native labour produced more than 20,000 tons in 1912, and only about 1,000 tons in 1913. South and East Borneo produced in 1913 about 165,000 tons, of which 137,000 tons were mined in Pulu Laut. Mainly by purchase from the natives, the East Borneo Company obtained 16,808 tons in Kutei in 1914. The natives work only surface deposits, often consisting of lignite, and in West Borneo they supply the river steamers.

Much the most important mines are those on the island of Pulu Laut, which have their centre at Semblimbingan, 3 miles from the port of Stagen. Here there are two seams, 7 and 6½ ft. thick respectively. Up to 1903 these mines were only worked on a small scale by the natives. Between 1907 and October 1913, at which date the Government took them over, the production amounted to 902,295 tons. In 1914 the production was 128,505 tons, of which 110,238 tons were shipped—76·55 per cent. for private concerns and 23·45 per cent. for Government services and public works. The mining is done chiefly by Javanese contract labour, and the average number of workmen employed in 1914 was 1,953. In the same year 201 ships coaled at Stagen, of which 148 were Dutch, 25 German, and 18 British. In 1913 the production of coal at Pulu Laut was 137,000 tons.

Petroleum.—The production of petroleum has now become the chief industry in Dutch Borneo, and the rapid development, which in the course of a few years has created the prosperous port of Balik Papan, is an indication of what may be achieved when labour is properly organized. The total production of raw petroleum, all of which comes from East Borneo, was, in 1913, 766,566 metric tons. It is a heavy oil, which yields plenty of fuel and paraffin wax, besides kerosene. Some of the wax is used for the manufacture of candles, which, on account of the high melting-point of Borneo paraffin, are particularly suitable for use in the tropics. The paraffin factory at Balik Papan is one of the largest and best equipped in the world, and modern plant for the distillation of engine oils is also being set up.

The production of East Borneo was thus divided in 1913:—

	Metric tons
Kerosene	191,465
Benzene	1,247
Straight-run	87,790
Batching oil	13,489
Solar and Diesel oil	2,502
Lubricating oil and grease ...	3,605
Paraffin	10,244
Candles	2,591
Liquid fuel	434,284

Except 2,011 tons of lubricating oil and grease and 222,852 tons of liquid fuel, which came from Balik Island, off the north-east coast, this all came from Balik

Papan, where there is one pipe-line 65 miles long of 5 inches diameter, besides many smaller.

A large fleet of tank steamers carries the petroleum products to all parts of the world. Most of them are loaded in bulk, but all methods of packing in tins are likewise used. The controlling authority is the combination of the Shell Transport and Trading Company with the Koninklijke Nederlandsche Maatschappij tot Exploitatie van Petroleumbronnen in Nederlandsche Indië, which operates through various subsidiary or affiliated concerns. In Borneo the oil is obtained by the Bataafsche Petroleum Maatschappij, which controls all production in the Dutch East Indies, with its administrative headquarters at Weltevreden, Batavia (see *Java* and *Sumatra*, Nos. 82 and 83 of this series). The Anglo-Saxon Petroleum Company ships to Europe; the Dordtsche Petroleum Maatschappij supplies the Dutch East Indies; and the Asiatic Petroleum Company distributes to other parts of the Far East. The Koninklijke Nederlandsche Maatschappij is nominally supreme in the Dutch East Indies, but the ultimate control is shared with a financial group in London, represented by the Shell Transport and Trading Company.

(5) MANUFACTURES

Serious dearth of labour is felt in all branches of industry; though on the coasts, where the favourite occupation of head-hunting has been practically abolished, the Dayaks are gradually growing more inclined to devote such energies as they possess to economically profitable business. The natives evaporate brine from marshes and springs for their own requirements; they also make furniture, cooking utensils, iron weapons, and boats, though most of the boat-builders at the ports are Chinese. Specialized crafts are unknown among the Dayaks. Every man is smith, carpenter, &c., as the need arises. The women are all taught weaving, dyeing, and spinning. Woven patterns are never copied, but always designed, a practice which cultivates the artistic sense for which the people are noted. Considerable artistic skill is shown in native decoration. The women make clothing liberally adorned with beads, and bracelets of copper and pewter. *Sarongs* are woven from materials imported from Singapore. The list printed below represents the industrial concerns employing five or more persons in June 1914; since that date vegetable oil factories have been established at Banjermasin.

——	West Borneo.	South and East Borneo.
Arak distilleries..	4	..
Bakery	1	..
Bookbinding works	..	2
Diamond cutting works ..	..	6
Furniture factories	..	5
Ice factories	1	2
Lemonade factories .. .	2	..
Machine factory..	..	1
Metal foundry	..	1
Mineral water factory	1	..
Petroleum products factories ..	..	2
Printing works	1	2
Repairing shops	1	2
Saw mills	42	21
Ship yards	3	2
Smithies..	1	2
Soap factory	1	..
Vegetable oils factories.. ..	2	..

(C) COMMERCE

(1) DOMESTIC

The Chinese, who form a much larger portion of the population of Dutch Borneo than of either Java or Sumatra, have practically all the retail trade of the towns and larger settlements in their hands, except where Bugis from Celebes have established themselves on the east coast, notably at Samarinda. The Chinese are especially numerous at Pontianak and in the district north and east of that town, but many are now found at Banjermasin, and they are flocking into the Barito basin generally. A great many are labourers on estates. There are only about a thousand Europeans in the whole of Dutch Borneo.

Inland trade is mainly carried on by a system of barter. The natives barter with each other or exchange their wares with the Chinese in return for krossok tobacco from Java and for cotton goods. They bring their produce down the rivers in *praus*. It consists chiefly of iron tools and weapons, plaited hats and mats, and rough wooden furniture, besides small quantities of copra, beeswax, rubber, timber, resin, tobacco, and pepper.

The chief centres of trade are Pontianak and Banjermasin. With the development of the mineral wealth of the neighbourhood and of the great agricultural resources of the Kapuas basin, Pontianak is certain to rise in importance. It is much healthier than Banjermasin, though not at present so large. Both towns may be expected to grow as the natives gradually acquire the habits and needs of civilization, and thus receive an incentive to work at developing the enormous natural resources of the country.

(2) Foreign

Statistics of commerce in the Outer Possessions of the Dutch East Indies are very confused. Government goods and goods sent to Java for reshipment are, for instance, sometimes included and sometimes omitted.

(*a*) *Exports*

Quantities and Values.—The following tables show some of the exports in the years 1913 and 1914, according to the 1915 Report of the Dutch East Indies Department of Commerce:—

WEST BORNEO.

Articles of Export.	1913.	1914.
	Tons.	Tons.
Rubber, *Ficus*	66	128
„ *Hevea*	*nil*	*nil*
Copra	..[1]	22,934
Copal (from Pontianak)	798	642
Rice, unhusked (from Sambas)	*nil*	294
Pepper, white	571	856
„ black	70	134
Rattan (from Pontianak)	4,251	*nil*

SOUTH AND EAST BORNEO.

Articles of Export.	1913.	1914.
	Tons.	Tons.
Rubber, *Ficus*	99	38
„ *Hevea*	5	156
Pepper, white	469	282
„ black	253	253
Rattan (from Banjermasin)	3,878	1,709
„ (from Samarinda)	2,677	..[1]

Exports in 1915 included the following from Pontianak and Banjermasin:—

——	Pontianak.	Banjermasin.
	Tons.	Tons.
Rubber, *Ficus*	312	*nil*
„ *Hevea*	*nil*	343
Guttas	1,263	2,117
Copra	10,723	162
Damar	1,672	198
Rattan	3,240	4,057
Coconut oil	613,336	*nil*
White pepper	217	*nil*
Sago meal, cleaned	2,542	*nil*
Tengkawang kernels	6,481	*nil*
Oil-cake	2,303	*nil*

[1] Figures not available.

In 1914 tobacco from Dutch Borneo was sold in Amsterdam to the amount of 14,942 bales, or about 1,140 tons; but in 1917 only about 70 tons, consigned to the Netherlands Overseas Trust, were placed on that market.

In 1913 there were exported from Dutch Borneo 5 stallions, 17 buffaloes, 498 steers, 4 oxen, 33 cows, 214 sheep, 342 goats, and 1,013 pigs.

In 1913, when the total exports exceeded 60,000,000 florins in value, the following were some of the items:—

——	West Borneo.	South and East Borneo.
	Thousands of Florins.	Thousands of Florins.
Betel nuts	516	*nil*
Coconut oil	671	*nil*
Copal	210	*nil*
Copra	5,718	1,102
Damar	45	*nil*
Guttas	1,026	2,115
Oil-cake	216	*nil*
Pepper	488	545
Petroleum, &c.	*nil*	46,464
Pit coal	*nil*	129
Rattan	546	1,471
Rubber	300	*nil*

The large quantities of bunker and other coal sold for consumption in the Dutch East Indies are, however, not included in these figures.

In 1915 the total value of merchandise exported, excluding gold and silver bullion and specie, was 106,149,000 florins. It rose to 113,726,000 florins in 1916, the increases being mainly due to copra, rubber, pepper and coconut oil in West Borneo, and to petroleum, rubber, pepper, and guttas in South and East Borneo.

Countries of Destination.—A threefold division of the exports, according as they are destined for Java, for the Outer Possessions, and for other countries, gives the following figures:—

Destination.	1915.		1916.	
	West Borneo.	South and East Borneo.	West Borneo.	South and East Borneo.
	Thousands of Florins.	Thousands of Florins.	Thousands of Florins.	Thousands of Florins.
Java	2,292	4,810	3,220	9,174
Outer Possessions ..	638	15,761	953	6,677
Other countries ..	10,624	72,024	12,694	81,008
Total	13,554	92,595	16,867	96,859
Grand Total ..	106,149		113,726	

(*b*) *Imports*

Quantities and Values.—Imports at Pontianak and Banjermasin in 1915 included the following:—

——		Pontianak.	Banjermasin.
Butter in tins ..	.. kilos.	6,162	8,654
Husked rice ..	.. ,,	14,756	5,648
Matches ..	gross boxes	31,901	71,499
Wheat meal ..	.. kilos.	329,865	283,202

The imports of live-stock into Dutch Borneo were, in the year 1913, 16 stallions, 500 buffaloes, 1,247 steers, 412 oxen, 816 cows, 648 sheep, 1,769 goats, and 2,355 pigs. In 1914 there were imported 1 stallion, 193 buffaloes, 3,073 steers, 100 cows, 424 sheep, 1,726 goats, and 1,818 pigs.

In 1913, when the total imports into Dutch Borneo exceeded 19,000,000 florins in value, the following were some of the items:—

——	West Borneo.	South and East Borneo.
	Thousands of Florins.	Thousands of Florins.
Biscuits	110	253
Chemicals ..	..	171
Haberdashery	121	..
Ironware	..	2,799
Machinery	..	2,422
Meal ..	..	206
Provisions (tinned goods, cheese, &c.)	513	404
Rice	1,541	2,555
Textiles	967	1,603
Tobacco, cigars and cigarettes	235	407

In 1915 the total value of imports exceeded 21,000,000 florins, including at Pontianak and Banjermasin the following values:—

——	Pontianak.	Banjermasin.
	Florins.	Florins.
Crockery	16,406	24,517
Haberdashery	65,884	27,663
Iron and steel .. .	53,188	30,744
Textile piece-goods and yarns .	895,359	829,834

In 1916 the imports exceeded 24,000,000 florins in value. In both Residencies there was a large increase in the figures for rice, and in South and East Borneo there were notable increases in those for textiles, machinery, and sugar.

Countries of Origin.—From countries outside the Dutch East Indies 37,245 tons of husked rice were imported in 1913 and 32,751 tons in 1914.

As regards distribution of values, the following figures are available:—

Country of Origin.	1915.		1916.	
	West Borneo.	South and East Borneo.	West Borneo.	South and East Bornec.
	Thousands of Florins.	Thousands of Florins.	Thousands of Florins.	Thousands of Florins.
Java	1,526	5,329	1,714	6,417
Countries outside Dutch East Indies ..	6,193	8,940	7,127	9,710
Total ..	7,719	14,269	8,841	16,127
Grand Total ..	21,988		24,968	

(D) FINANCE

Public finance and currency are dealt with in *Java* and *Sumatra*, Nos. 82 and 83 of this series. The sources of revenue in Dutch Borneo are :—

Import and export duties, including a small duty on certain kinds of imported tobacco.

Monopolies of salt and opium.

Dues on gold, diamond-digging, arak and spirits, ferries, pawnbroking, pork, and dice, with certain exemptions; also 10 per cent. on the value of timber brought down from the Upper Kutei to Samarinda, as assessed for export duty at that port.

A poll-tax on some natives in commutation of statute labour.

The Javasche Bank has branches at Banjermasin and Pontianak. The Nederlandsche Handel Maatschappij and other large Dutch institutions also have branches in Borneo.

British capital is invested to the extent of many millions of pounds in the rubber companies of Dutch

Borneo; and the Shell Transport and Trading Company, of London, in conjunction with the Koninklijke Nederlandsche Maatschappij already mentioned, controls the entire petroleum production of the country.

(E) GENERAL REMARKS

In spite of the great potential wealth of the country, it is still to a large extent undeveloped; and, although the dense forests extend to within a few miles of Banjermasin, no foreigner is allowed to lease land for the purpose of searching for minerals, though an agricultural concession may be granted him, provided he is resident in the Dutch East Indies.

With this exception, concessions from the Dutch East Indies Government are granted to Dutch citizens or corporations only, but the holders have the right to transfer their interest to persons or corporations of foreign nationality. The object of this law is to prevent political interference by foreign Governments. American capital is now being encouraged to compete with British and German capital in Borneo by participating in nominally Dutch enterprises.

It has been proposed that a body called the American Syndicate should be formed, with an initial capital of £2,000, having its head office in New York and an advisory board in Batavia. This holding company would establish Dutch subsidiary companies, registered in the East Indies, and control their capital. The Dutch companies would hold the concessions. The syndicate would have the support of the Javasche Bank; and, though the bank is forbidden by its charter to take up shares, one of its managers might join the board. Enterprises in Borneo are especially contemplated.

Mr. J. Gerritzen, vice-president of the Javasche Bank, is a member of the board of the Straits and Sunda Syndicate, founded some years ago by German capitalists, with headquarters in Hamburg and an office in Batavia. This German syndicate is largely interested in agricultural and other enterprises in the Dutch East Indies. It has a nominal capital of a few hundred pounds, but intended, before the war, to issue debentures up to several million marks. Possibly these were taken up secretly by German banks, as the syndicate opened six plantations in Java and Sumatra in 1912, in each case Dutch companies being formed, of which the German syndicate held all the capital. Herr E. Helfferich, of Batavia, was the ruling spirit of this syndicate, and before the war was contemplating similar enterprises in Borneo. The direct trade between Japan and Dutch Borneo is increasing; and in 1918 the Japanese systematically collected copra in their own vessels from the Anambas and Tambilan Islands.

ISLANDS ADJACENT TO BORNEO

The few islands near the coast of West Borneo are included for administrative purposes in the Residency of Riouw and Dependencies. Their aggregate population is only a few thousands.

Pulu Laut.—This wooded island, 55 miles in length, and separated by a narrow channel from the south-east coast of Borneo, has already been sufficiently treated in connection with its coal mines at Semblimbingan and its ports at Stagen and Kota Baru.

Karimata Islands.—These islands, 60 in number, lie off the west coast of Borneo. The largest is known as Great Karimata, and another of fair size is Kampong. The inhabitants, mainly settlers from Lingga and Siak, are chiefly occupied in fishing and ironworking.

Natuna Islands.—Of this group of 55 islands, lying west of Borneo in the China Sea, by far the largest is Great Natuna, or Bunguran, which has a surface of some 600 square miles. The natives are Malays trading with Riouw and Singapore in turtles, tortoise-shell, coconuts, sago, and mats.

The *Tambilan* and *Anamba* groups, lying between Borneo and Malacca, have a small population engaged mainly in fishing and the production of copra.

APPENDIX

EXTRACT FROM THE CONVENTION BETWEEN GREAT BRITAIN AND THE NETHERLANDS, DEFINING BOUNDARIES IN BORNEO, JUNE 20, 1891.

(See Hertslet, L. *A Complete Collection of Treaties, &c.* Vol. xix, p. 755.)

Art. I. The boundary between the Netherland Possession in Borneo and those of the British-protected States in the same island shall start from 4° 10′ north latitude on the east coast of Borneo.

Art. II. The boundary line shall be continued westward from 4° 10′ north latitude, and follow in a west-north-west direction, between the rivers Simengaris and Soedang, up to the point where the meridian 117° east longitude crosses the parallel 4° 20′ north latitude, with the view of including the Simengaris River within Dutch territory. The boundary-line shall then follow westward the parallel 4° 20′ north latitude until it reaches the summit of the range of mountains which forms on that parallel the watershed between the rivers running to the north-west coast and those running to the east coast of Borneo, it being understood that, in the event of the Simengaris River or any other river flowing into the sea below 4° 10′ being found on survey to cross the proposed boundary-line within a radius of 5 geographical miles, the line shall be diverted so as to include such small portions or bends of rivers within Dutch territory; a similar concession being made by the Netherland Government with regard to any river debouching above 4° 10′ on the territory of the British North Borneo Company, but turning southwards.

Art. III. From the summit of the range of mountains mentioned in Article II to Tandjong-Datoe, on the west coast of Borneo, the boundary line shall follow the watershed of the rivers running to the north-west and west coasts north of Tandjong-Datoe, and of those running to the west coast south of Tandjong-Datoe, the south coast, and the east coast south of 4° 10′ north latitude.

Art. IV. From 4° 10′ north latitude on the east coast the boundary line shall be continued eastward along that parallel, across the Island of Sebittik; that portion of the island situated to the north of that parallel shall belong unreservedly to the British North Borneo Company, and the portion south of that parallel to the Netherlands.

Art. V. The exact positions of the boundary-line, as described in the four preceding Articles, shall be determined hereafter by mutual agreement, at such times as the Netherland and the British Governments may think fit.

Art. VI. The navigation of all rivers flowing into the sea between Batoe-Tinagat and the River Siboekoe shall be free, except for the transport of war material; and no transport duties shall be levied on other goods passing up those rivers.

Art. VII.—The population of Boelongan shall be allowed to collect jungle produce in the territory between the Simengaris and the Tawao Rivers for 15 years from the date of the signature of the present Convention, free from any tax or duty.

AUTHORITIES

HISTORICAL

Admiralty Charts.

BECCARI, ODOARDO. *Nelle Foreste di Borneo.* Florence, 1902.

British Diplomatic and Consular Reports, No. 5325 Annual Series (1913) and No. 5083 Annual Series (1912).

BROWN, J. MACMILLAN. *The Dutch East.* London, 1914.

CABATON, A. *Les Indes néerlandaises.* Paris, 1910. (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911.)

CAMPBELL, DONALD M. *Java: past and present.* 2 vols. London, 1915.

Cotton Goods in the Dutch East Indies. (U.S.A. Department of Commerce, Special Agents' Series, No. 120.)

Encyclopaedie van Nederlandsch-Indië. [1st Ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895-1905.]

——— [2nd Ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

FURNESS, W. H. *The Home Life of Borneo Head-Hunters.* Philadelphia, 1902.

GOMES, E. H. *Seventeen Years among the Sea-Dyaks of Borneo.* London, 1911.

GROOT, J. J. M. DE. *Het Kongsiwezen van Borneo.* The Hague, 1885.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

In- en Uitvoer, Handels-Economisch Weekblad voor Nederland en Kolonien. The Hague, 1876, &c.

Jaarboek van Nederlandsch-Indië. Batavia, 1917.

Jaarcijfers voor het Koninkrijk der Nederlanden (Koloniën). The Hague, 1915.

Lloyd's Register.

Mededeelingen van het Bureau voor de Bestuurszaken der Buitenbezittingen, bewerkt door het Encyclopaedisch Bureau der Buitenbezittingen, 1904 *tot* 1914. The Hague, 1915.

NIEUWENHUIS, A. W. *In Centraal Borneo.* 2 vols. Leiden, 1900.

NIEUWENHUIS, A. W. *Quer durch Borneo*, 1894-1900. 2 vols. Leiden, 1904-7.

Regeerings-Almanak voor Nederlandsch-Indië. Batavia, 1917.

U.S.A. Supplement to Commerce Reports 53A, November 30, 1915.

Verslag omtrent Handel, Nijverheid en Landbouw van Nederlandsch-Indië gedurende, 1915. Batavia, 1916.

WALCOTT, ARTHUR S. *Java and her Neighbours.* New York and London, 1914.

WRIGHT, ARNOLD. *Twentieth Century Impressions of Netherlands India.* London, 1909.

ECONOMIC

Cotton Goods in the Dutch East Indies. (United States Department of Commerce, Special Agents' Series, No. 120.)

Encyclopaedie van Nederlandsch-Indië. [1st Ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895-1905.]

——— [2nd Ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

In- en Uitvoer, Handels-Economisch Weekblad voor Nederland en Kolonien. The Hague, 1876, &c.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Netherlands East Indies, Trade, &c. (British Diplomatic and Consular Reports, Annual Series.)

Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.

BECCARI, ODOARDO. *Nelle Foreste di Borneo.* Florence, 1902.

BROWN, J. MACMILLAN. *The Dutch East.* London, 1914.

CABATON, A. *Les Indes néerlandaises.* Paris, 1910. (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911.)

CAMPBELL, DONALD M. *Java: past and present.* 2 vols. London, 1915.

FURNESS, W. H. *The Home Life of Borneo Head-Hunters.* Philadelphia, 1902.

GOMES, E. H. *Seventeen Years among the Sea-Dyaks of Borneo.* London, 1911.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

NIEUWENHUIS, A. W. *Quer durch Borneo,* 1894-1900. 2 vols. Leiden, 1904-7.

WALCOTT, ARTHUR S. *Java and her Neighbours.* New York and London, 1914.

WRIGHT, ARNOLD. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Extent

The island of Celebes[1] extends between 1° 50′ north latitude and 5° 45′ south latitude; its westernmost point near Cape William is in about 118° 49′, its easternmost by the Limbe Strait in about 125° 15′ east longitude. The island is some 800 miles long, and its total area is about 71,400 square miles. Its length is disproportionate to its breadth, which is generally between 36 and 120 miles, narrowing at one point to 18.

The political boundaries do not coincide with the geographical divisions. The Government of Celebes and Dependencies includes the island of Sumbawa and the western portion of Flores (see *Dutch Timor and the Lesser Sunda Islands*, No. 86 of this series) as well as the islands between; on the other hand, parts of eastern Celebes are included in the Residency of Ternate (see *Dutch New Guinea and the Moluccas*, No. 87 of this series). It must be remembered when dealing with official figures that the political divisions to which they refer do not correspond with the geographical areas.

(2) Surface, Coasts, Rivers, and Lakes

Surface

The shape of the island of Celebes may be compared to the letter K in old print. The plural form of its name shows that it was once regarded as several islands. From the backbone of the island there project three long peninsulas, running respectively north-east, east, and south-east, the first of which is considerably the longest. The whole island is mountainous, and individual heights such as Mt. Batang in the extreme south, and Mt. Koruwe in the centre of the island, rise to more than 10,000 ft. In the extreme north-east and south the mountains are volcanic, and solfataras and hot springs are found in Minahasa in the extreme north-east.

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[1] A general account of the islands off the coast of Celebes, dealing with their geography and economic conditions, will be found on pp. 29–33, in Section IV, Economic Conditions.

The part of the island that runs north and south has two parallel ranges in its southern extension with a valley between, constituting the basin of the River Walannae (Wallana), which drains into Lake Tempe. The western range terminates in the great mass of Batang, while the eastern is continued across the Salaier Strait into the island of Salaier (Saleijer, Salajar). Between the western range and the sea is an alluvial coast plain 7 to 30 miles wide, but throughout the island as a whole there is little alluvial land. North of the central block the elevation of the mountains is lower, and there is only a single ridge. In the western part of the central block is a series of mountain ridges with intervening plateaux, which run down in parallel lines to Cape Mandar.

At Cape Dondo the line of the mountains changes. The north-eastern peninsula at first runs west and east; then, after continuing for more than two hundred miles in this direction it turns to the north-east, and the volcanic region of Minahasa begins. This is the most mountainous part of the island, the highest point, Mt. Klabat, at the extreme north-east end of the island, rising to 6,560 ft. The volcanic activities of this region have had a great effect on the fertility of the soil, and the forests here are uniformly luxuriant.

In the eastern and south-eastern promontories the mountains sweep round in semicircles from the island of Peling to the island of Buton. The south-eastern promontory has much the same characteristics as the southern peninsula, and parallel mountain ranges along the two coasts bound a swamp of no great breadth which lies along the shore.

The eastern peninsula is little known, but it appears to present the same features as the south-eastern peninsula. Along the south coast lie the Tokalla (Toekala) Mountains, more than 8,000 ft. high.

Much of the island is covered with forest, especially round the Gulf of Tolo. The vegetation grows up the mountain-slopes, and the rift valleys are extremely fertile.

Coasts

Celebes is situated in a very deep sea, of which the only shallow part is the southern section of the Straits of Macassar. The coast is, generally speaking, dangerous, fringed by coral reefs, and with many shoals and banks.

The island is deeply indented by three great gulfs: Tomini (or Gorontalo) between the north-eastern and eastern peninsulas, Tolo (or Tomaiki) between the eastern and south-eastern, and Boni between the south-eastern and southern, and in consequence of these deep indentations it has a coast-line of more than 2,000 miles.

As a rule the mountains come very close to the sea, and the strips of coastal plain are narrow, but there are some larger stretches, e. g. near Luwu at the head of the Gulf of Boni; in the neighbourhood of Macassar; and the plain of the River Tangka near Sinjai.

The numerous reefs and shoals are a great hindrance to coastal trade.

Rivers and Lakes

The rivers of Celebes are of little importance, and various exaggerated accounts of their length have been given. Their course is rapid, and their fall great. Waterfalls and rapids are very frequent, the best known being those on the River Tondano. The only rivers of any length are those which run longitudinally, and these either collect into basins of inland drainage, like the Opa swamp or lake, or break at right angles across the mountain ranges. The Tjenrana, which drains Lake Tempe, and the Lariang, which, after flowing northward under the name of the Koro, turns westward and reaches the Macassar Strait, belong to the latter class. Others, like the Palu, flow into a longitudinal sea-inlet.

The lakes lie along the rifts between the parallel chains of mountains. In Minahasa is Lake Tondano (2,000 ft. above the sea) with a length of 9 miles and a width of 3½ miles. The newly discovered Lake Ililoi is merely an extension of the River Poigar. In Gorontalo are Lakes Limbotto, Batudaka, and Bolano Sawu. In the centre of the island is Lake Lindu, drained by the River Gumbasa into Palu Bay; farther south in the same rift are Lakes Tempe and Sidenreng, which almost dry up during the dry monsoon, leaving tracts for the cultivation of rice and maize. East of this are the chief lakes of the island, Posso, Matana, and Towuti, which are very deep. Farther south is the swamp of Lake Opa.

(3) Climate

Celebes is very hot and subject to equatorial rains. At the same time no part of the land is far from the sea, so that it is cooled by sea-breezes. Despite the heavy rainfall, there are hardly any marshes like those which give Borneo its excessive humidity, as the sloping surface of the land allows the rain to run off quickly.

The temperature ranges generally between 77° F. (25° C.) and 80° F. (26·6° C.), the extremes being about 90° F. (32° C.) and 70° F. (21° C.). Only on the higher mountains does it fall during the night to 54° or 55° F. (12° C.).

Celebes is under the influence of the monsoons, and the seasons are different north and south of the Equator. South of the Equator the east monsoon (north-east to south-east) blows from April to October, the west monsoon (north-west to south-west) from October to

April. North of the Equator the monsoon is south-west from April to September, north-east for the rest of the year. To the south the rainy season begins in December and the monsoon is at its height in January. To the north the force of the wind is less, the seasons are feebly defined, and the rainfall is more equally distributed throughout the year. The climate of the east and west coast varies, and to some extent the date of the monsoons. The position of the island is very favourable; the violence of the west monsoon is broken by the near neighbourhood of Sumatra and Borneo, and the parching south-east winds from Australia affect only the southern and south-eastern peninsulas.

Macassar has a regular wet and dry season. In Minahasa the rainfall is more evenly distributed, and the country always looks green, although occasionally subject to drought. In Macassar the average annual rainfall is 116·5 in. (296 cm.): the driest month is August (0·4 in., 1 cm.); the wettest, January (28·7 in., 72 cm.). In Menado the average rainfall is 105·4 in. (267 cm.): the driest month is September (3·3 in., 9 cm.); the wettest, January (18·1 in., 41 cm.). At Gorontalo, south of the mountain chain on the same peninsula, the conditions are very different, the rainfall being 47 in. (119 cm.). Again, Menado is usually dry in August and September; Kema, on the other side of the mountains, has considerable rains in those months.

(4) SANITARY CONDITIONS

On the whole Celebes enjoys a fairly good reputation for health, and is said to be the healthiest of the four great islands. Menado is extremely healthy, and epidemics are very rare there; the heat is tempered by sea-breezes, so that the nights are cool. Macassar too is healthy, though the site is low and flat, and Kandari Bay also enjoys a good climate. On the other hand, Gorontalo is on an unhealthy site, and there are constant outbreaks of fever. Marsh fevers and dysentery are not unknown in the island, especially in the centre; and near Lake Posso pulmonary affections have been common. Among other illnesses known in Celebes are meningitis and beri-beri, while cholera occurs periodically in various parts, and in 1914 a violent type of malaria showed itself in Salaier. In Talauer malaria is frequent, and malignant fevers are prevalent along the coast.

(5) RACE AND LANGUAGE

It is supposed that the oldest stratum of the inhabitants is represented by the Toalas, but it is uncertain whether these are really an aboriginal race. The Toalas, who live near Mt. Latimojong in the southern part of central Celebes, and the Tokeas and Tomunas of the south-eastern peninsula, are thought to be members of this group, though the Tokeas have a large admixture of Toraja blood. The Toalas and Tomunas are a very short people, much darker than their neighbours, with a distinct language of their own.

The other native inhabitants of Celebes are members of the Malayo-Polynesian family. Most of them are known by the collective name of Toraja, a name which properly belongs to a tribe in the western part of central Celebes. The Torajas, in the wider sense of the term, inhabit central, eastern, and south-eastern Celebes; along the coast, the population becomes much more mixed in character.

The Minahasese in the extreme north are an intelligent race, capable of development. They are quite distinct in type from the other inhabitants, and it has been supposed that they have a strain of either Javanese or European blood. Their skins are lighter than those of the other inhabitants of the Dutch East Indies, and they are on the whole taller and stronger than the other inhabitants of Celebes. There are four tribes of them, as well as the more divergent Bantiks, and closely allied with them are the inhabitants of the Sangi Islands.

Other peoples are the Gorontalese and Mandars, who are really members of the Toraja family; and the Buginese (Bugi) and Macassars, who are nearly related to one another, and are probably descended from Toraja tribes who have come in contact with Hinduized Javanese. The Macassars inhabit a broad belt to the west of the southern peninsula; the Buginese inhabit the rest of the peninsula, and are scattered in other parts of the coasts of Celebes, Borneo, and some other islands of the archipelago. The latter especially are a seafaring tribe, devoted to trading, and have spread abroad in the Dutch East Indies, while retaining their own language and customs.

There is a certain number of Europeans, Chinese, and Arabs. The Europeans are generally found either in Minahasa or in the neighbourhood of Macassar.

Many dialects are in use among the different Toraja tribes, who cannot as a rule speak any language except their own, though that of Palu is largely used as a *lingua franca* in central Celebes.

(6) POPULATION

Distribution

It is very difficult to give precise information as to the numbers of the population in Celebes, as up to the middle of last century much of it was unexplored. Estimates of the population are accordingly largely conjectural, and differ very widely. Thus the official figures for 1914 give the total for the whole island as 4,700,000, while the *Encyclopaedië van Nederlandsch-Indië* (1917) gives the numbers as 2,700,000. The returns are further complicated by the fact that the only details which are given in most lists are those of the parts under direct Dutch government, and where a sudden access of numbers is found it is not due to an increase in the birth-rate but to the fact that native states have come directly under Dutch government. The largely conjectural figures of 1912 give for the Government of Celebes and its Dependencies, including Salaier, a total of 1,977,455, including

1,968,765 natives, 1,808 Europeans, 6,064 Chinese, 818 Arabs; for the Residency of Menado, which includes the Sangi and Talauer Islands, a total of 700,236, including 691,102 natives, 1,210 Europeans, 6,657 Chinese, 1,262 Arabs, and 5 other foreign Orientals. In 1913 there were only three British residents, but about fifty Germans.

The population is very unevenly distributed, two-thirds of the country being almost uninhabited. The most thickly populated parts are Minahasa, which, with a population of 200,000 inhabitants, has 1·62 people to the square mile, and the island of Salaier, which, with a population of 75,000, has more than twice this density. The coasts are fairly well populated, but in the centre of the island the small settlements are parted from one another by tracts of mountain and forest. Of the parts directly governed by the Dutch the population averaged (in 1905) 18 per square mile in the Government of Celebes and 15·8 in the Residency of Menado; but for the whole area the average density per square mile was 4 in the Celebes Government and 1·5 to 2 in the Menado Residency.

Towns and Villages

There are few towns of any size or pretensions, and they are nearly all at the two extremities. The largest is *Macassar* (*Makasser*, population, 26,146,[1] including 20,178 natives, 1,060 Europeans, 4,672 Chinese, 141 Arabs, 95 other foreign Orientals), which was a free port from 1848 till 1906.

Other towns are *Menado* (population, 10,329, including 6,669 natives, 576 Europeans, 2,784 Chinese, 300 Arabs), which is the capital of the Residency of the same name; *Tondano* (population, 10,630, including 10,329 natives, 35 Europeans, 266 Chinese), in Minahasa; *Gorontalo* (population, 6,352), on the Gulf of Tomini; *Bantang* or *Bonthain* (population, 6,889), the port of an agricultural district; *Sinjai* (population, 3,779), on the west shore of the Gulf of Boni; *Amurang* (population, 2,945), on the northern peninsula; *Donggala*, on Palu Bay; *Tombuku* (or *Sakita*), a very prosperous place; *Kolonedale* on Tomori Bay; and *Kema*, which serves as an alternative port for Menado when the wind is unsuitable for the latter.

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[1] The figures for the town populations are taken from the census of 1905.

Movement

A comparison between the official figures of 1912 and those of 1905 is useless, because the estimates have been made on different bases, those of the later date including territories which had been under native government in 1905. Between 1900 and 1905 the native population of the Government of Celebes had diminished by nearly 40,000; in Menado Residency it had increased by 5,000.

The principal causes of a low birth-rate have been the early age of union between the sexes, and the frequent absence of the men from their homes when engaged in collecting forest produce. Head-hunting has also exercised its usual disastrous effect on numbers. In all these respects, however, the regulations of the Dutch Government have greatly ameliorated the conditions.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

1512. First Portuguese settlement at Macassar.
1563. Portuguese priests land at Menado.
1666. Dutch supremacy established by Cornelis Speelman's expedition against Macassar.
1667–69. Treaties concluded by the Dutch with various native rulers.
1681. Dutch conquest of Minahasa.
1702. Fort Amsterdam erected near Menado on the site of an old Portuguese post.
1825. Confirmation of Dutch sovereignty.
1904. Final pacification and subjection of southern Celebes by the expedition to Gowa.

HISTORICAL SKETCH

WHEN, about the middle of the seventeenth century, the Dutch first landed in Celebes, the Portuguese were already carrying on a thriving trade with the state of Macassar ; and they succeeded in rendering the Sultan so hostile to the new-comers that, before the latter could safely establish themselves, the Dutch East India Company was obliged to undertake several armed expeditions. The last and most successful of these was that of 1666 under Cornelis Speelman, whose victory over the Sultan was complete, and was followed in 1667, 1668, and 1669 by the conclusion of a series of treaties with most of the other rulers of southern Celebes, a confederation being thus formed which acted as a counterweight to Macassar.

In 1681 the Sultan of Ternate, who held sway over the small states of northern Celebes, was likewise defeated by the Company, which thus became possessed both of Ternate with its island of Halmàheira, and of north-eastern Celebes (Minahasa) ; and a fort was built in 1702 near the town of Menado.

When the temporary British occupation of Dutch possessions at the beginning of the nineteenth century came to an end, the rulers of all territories affected by the treaties of 1667, 1668, and 1669 assembled at Macassar, and in 1825 signed a revised agreement, by which they confirmed the existence of their confederation and the suzerainty of Holland. The state of Boni, however, with its vassals Tanette and Soepa, stood out; and, although all three were subjugated by the end of 1825, fresh troubles arose in Boni, which were not finally overcome till 1860, while as recently as 1904 an expedition had to be sent to Gowa in the neighbourhood of Macassar.

III. SOCIAL AND POLITICAL CONDITIONS

(1) Religious

The Torajas are mostly pagan, while many of the Alfurs have become Christian. The Minahasese are, with few exceptions, Christian, the Protestants far outnumbering the Roman Catholics. The Buginese and Macassars are Mohammedans with a strong tincture of paganism.

(2) Political

Only the Minahasa district in the north, the department of Gorontalo, and a small area in the neighbourhood of Macassar, are directly governed by the Dutch. The Government of Celebes and Dependencies, which has its seat at Macassar, includes the whole southern part of Celebes together with various islands near the coast, the most important being the populous and fertile Salaier. The Residency of Menado includes northern and part of central Celebes. A portion of eastern Celebes is still included in the Residency of Ternate, but is of no economic importance. Otherwise, with the exception of the province of Laiwui in south-eastern Celebes, which is governed under a detailed political contract with its ruler, the whole of Celebes is under native chiefs who have made what is known as the ‘ Short Declaration ’ of allegiance to the Dutch Government. (See *Java*, No. 82 of this series, p. 35.)

(3) Educational

Educational conditions in the Outer Possessions are described in *Sumatra*, No. 83 of this series.

IV. ECONOMIC CONDITIONS

(A) MEANS OF COMMUNICATION

(1) INTERNAL

(a) *Roads*

A LARGE portion of the island of Celebes is unexplored and covered with forest, and regular roads are consequently confined to a few districts. The Government has, however, devoted considerable attention to road-making. There are some good main roads in the neighbourhood of Macassar and Menado, with several teak and other bridges across the rivers. Something has also been effected in other parts of the island. For instance, a new road has been made from Wattangpone to Ujong, by the help of 12,000 days of statute labour. It is 36 miles long and 4 metres broad, with a metalled crown 1 metre in width.

(b) *Rivers, &c.*

The rivers of Celebes are mostly unimportant: in general they are short mountain streams with deep beds. The *Walannae* (*Wallana*), however, is navigable by native boats for a considerable distance, and has a depth of 7 ft. at Ujong even in the dry season. The *Lasolo* and *Sadang* rivers, the longest in Celebes, are only navigable by small vessels. The *Jenemeja* is a broad river, navigable by small vessels for a considerable distance from its mouth. The *Posso* is navigable by native craft up to Paluasi, but is full of rapids above. The rivers of Gorontalo are only navigable by native craft for a few miles.

The facts that no point in the island is very far from the coast, and that there is everywhere ample shelter for small craft, combine to make the sea the natural and usual means of communication for the inhabitants. There are many small ports round the coast, between which intercourse takes place by boat. A typical port of the kind is Badjowe, the outlet for Wattangpone, where there are 140 praus, each capable of loading ten tons.

(c) *Railways*

There are no railways in Celebes, but a steam tramway connects Macassar with Bonthain.

(d) *Posts and Telegraphs*

In 1914 there were 53 post offices on the island and 95½ miles of telegraph wires. The services are adequate to the districts of which Macassar and Menado are the centres; elsewhere the country is too sparsely populated to require a more extensive service.

(2) EXTERNAL

(a) *Anchorages and Ports*

Although for the most part there is deep water close inshore round the coast of Celebes, the approaches to the island are rendered dangerous to large vessels by the reefs and shoals which almost everywhere surround it.

The harbour of *Macassar* affords safe anchorage at all seasons; there is a depth of 60 ft. of water at the entrance, and the rise and fall of the tide is 5 ft. Steamers load and discharge at a wharf, about 1,640 ft. long, belonging to the Government. There is also a Government pier, about 250 ft. long, reserved for Government vessels, and another, about 450 ft. long, belonging to the Asiatic Petroleum Company and used by their vessels. Harbour and anchor dues have been collected at Macassar since August 1906; for fifty-eight years previously it was a free port.

In 1911 the Government authorized harbour improvements which it was estimated would cost fls. 7,500,000. The actual expenditure in 1911, 1912, 1913, and 1914 was fls. 68,116, fls. 428,366, fls. 1,084,055, and fls. 1,326,016. The plans included the construction of a quay 1,804 ft. in length, alongside which ships of 29½ ft. draught could moor at low tide. In 1914 an additional quay of the same length was begun, capable of accommodating even larger ships. Between the new quay and the old pier a stretch of nearly 1,000 ft. was reserved for the construction of a harbour for lighters, the plans for which were subsequently altered in order to provide better protection against the prevailing winds. When the new works are complete, the length of wharf available for ships of 30 ft. draught will be 3,608 ft., and this may subsequently be extended by another 787 ft.; there will be a further 1,722 ft. of wharf available for ships of 23 ft. draught, and 1,148 ft. of quay for lighters. There will also be ample room for sheds, goods and storage yards, warehouses and stores. When there was a glut of copra in December 1917 owing to lack of freight room, it was possible to store about 100,000 tons at Macassar.

The following table shows the nationality and numbers of steamships, engaged in foreign trade, which entered the port of Macassar in 1912:

Nationality.	*With Cargo.*		*In Ballast.*	
	Vessels.	*Tonnage.*	*Vessels.*	*Tonnage.*
British . .	3	9,192	4	15,266
Dutch . .	394	653,064	12	19,919
German . .	73	136,928	4	11,190
Totals .	470	799,184	20	46,375

In 1914 648 vessels called, with a total tonnage of about 968,683.

At *Menado* there are no docks or wharves, and vessels have to load and discharge by lighter. About 100 yards from the shore the bottom shelves suddenly, the depth increasing from 7 to over 20 fathoms. The harbour is exposed towards the west, and when the *barat*, a strong south-west wind, is blowing there is a heavy swell. Ships consequently have to anchor by the stern, and be ready to get up steam and put to sea at half an hour's notice. The praus used for lightering are very small and primitive, largely owing to the fact that the bar at the mouth of the Menado river is only covered by about one foot of water at low spring tides, and at all times constitutes a danger which prevents the improvement of the boats. The arrangements at the waterside at Menado are also primitive. In fair weather the praus unload on the sloping shore outside the bar, and coolies carry up the goods. In rough weather the praus pass up the river and discharge alongside a bad sloping quay wall of basalt, at which goods are also loaded for export. There are two custom houses.

It has been proposed to canalize the Menado river and construct a wharf on the left bank for some 300 yds. up stream. The river and the large sandbank before its mouth would be dredged so as to give a depth of 10 ft. at low spring tide, and a dredging machine would be stationed at the port. Two piers would have to be built to protect the entrance to the harbour in the *barat* season, and prevent it silting up.

As regards intercourse with China, Japan, and America, Menado, which is on the direct route from Hong Kong to Port Darwin (Australia), has a much more central position than Macassar. If the harbour could be made suitable for ocean-going vessels, Menado should develop a great export and transit trade in copra from the Sangi and Talaur Islands, and from Talisse, a small island off the north coast of Minahasa; in copra, ebony, and mace from Amurang, Kwandang, and other ports of the north coast of Celebes; in copra, rattans, ebony, and gum damar from Gorontalo and the Gulf of Tomini generally; and in spices from the northern Moluccas and New Guinea.

On the other hand, it has been suggested that Menado might be abandoned as a harbour in favour of the other ports in the neighbourhood. *Kema*, 19 miles east of Menado, beyond Cape Polisan, claims to possess a good harbour available in all seasons, and the boats of the Koninklijke Paketvaart Maatschappij already touch there in preference to Menado from

December to February. Recent reports, however, describe Kema as inconveniently placed and exposed to a heavy swell during the east monsoon. Another rival is *Amurang*, to the south-west, which is said to have a much better protected roadstead than Menado; it has been proposed that all export business should be transferred thither, but this plan does not seem likely to be carried out.

Gorontalo has an indifferent harbour, formed by an inlet in the mountainous south coast of the northern peninsula. In the middle of the bay there is a depth of 40–70 fathoms, but the two rivers flowing into it bring down a quantity of sand, so that in some parts the depth decreases to 3 ft. and even less. It is proposed to improve the accommodation by building a dam from the east side of the bay to an island which has been formed by silt in mid-stream. This would confine the river to the west side of the channel, and a harbour would be formed for praus. The mountains here rise so steeply from the shore that very little room is available for storage. Only one prau can unload at a time, by means of a landing-board from the threshold of the warehouse. The custom-house is very primitive, and a road which was constructed at great expense from the custom-house to Gorontalo is frequently damaged by land-slides. Even without these drawbacks, however, Gorontalo would not have the prospects of Menado, though it possesses one advantage in an ample labour supply. It has no back-country, and its exports—for example, ebony, gum damar, and rattan—come mainly from the coasts in the immediate neighbourhood. Kapok-trees grow well and might be made profitable. The export of copra from Gorontalo is less than a quarter of that from Menado.

From *Boni*, which gives its name to the great gulf in the south of the island, are exported maize, rice, fine woods, coco-nuts, copra, deer-horns, hides, arms, pottery, and carved wood. This old port is typical of many in Celebes in the variety of its trade, but the total value is inconsiderable.

Bonthain, Sinjai, and *Pare Pare,* on the south western peninsula, have good anchorages. *Palu Bay* is likely to develop into an important harbour. Palu lies at the base of the long northern peninsula, where the neck is not more than 18 miles across; it is proposed to cut a canal connecting Palu on the west with Parigi on the east. *Donggala,* at the entrance of Palu Bay, is growing rapidly, and speculators expect it to rival Macassar in importance when the canal is completed.

There are several other bays affording anchorages, such as Kwandang and Dondo on the north coast, Tambu on the west coast, Tomori, Kendari, and Staring on the Gulf of Tolo, Mengkoka, Palopo, Usu, and Sopang on the Gulf of Boni, and Posso and the Gulf of Poh in the Gulf of Tomini.

(*b*) *Shipping Lines*

In January 1914 the Koninklijke Paketvaart Maatschappij instituted a weekly express service between Surabaya and Macassar, with an extension once a month to Menado. Praus make the trip from Macassar to Surabaya in about eight days. Before the war the Deutsch-Australische Dampfschiff-Gesellschaft used to call at Macassar, where it had an agency, and was obtaining a large share of the carrying trade. Norddeutscher Lloyd steamers used also to touch at Macassar, and had agencies there and at Menado and Gorontalo. The Java–China–Japan Line and the Ocean Steamship Co. (Alfred Holt & Co., Liverpool) both have agencies at Macassar, the latter being associated with the Nederlandsche Stoomvaart-Maatschappij Oceaan of Amsterdam. The Japanese South Pacific Trading Company takes copra in its own motor-schooners direct from Menado to Japan. A representative of the Nippon Yusen Kaisha visited Menado recently, and in 1917 the Nanyo Yusen Kaisha was endeavouring to obtain the consent of the Japanese Government to run a regular service to Menado, beginning early in 1918.

(c) *Cable and Wireless Communication*

Macassar has been connected by a Dutch cable with Banarukan in Java, *via* Buleleng on Bali Island, since 1888. Another Dutch cable from Balik Papan in Borneo to Kwandang and Menado was laid in 1903. There are also cable connexions between Kema and Ternate, and along the coast from Kema to Gorontalo.

There is a wireless station at Macassar.

(B) INDUSTRY

(1) Labour

The dearth of labour is most acutely felt in the Minahasa district. There the boys mostly become clerks in Java or join the army, and the women far outnumber the men. On March 8, 1915, there were 1,795 contract coolies in the Residency of Menado, comprising 1,260 Javanese men, 120 Javanese women, and 415 Gorontalese. In future it may be possible to supply the labour so badly needed at Menado by drawing yet further on Gorontalo. The conditions under which contract labourers work are described in *Sumatra*, No. 83 of this series. Agricultural wages are low, about 4*d.* being paid for a day of ten hours. The Government has the right to demand statute labour from the natives at the rate of one day in seven.

The opium monopoly has an important bearing on the problem of labour, for while opium does not appear to affect the industry of the Chinese it utterly demoralizes natives who become addicted to its use. The monopoly was applied to the whole of Celebes in 1907, and although in Macassar the consumption of opium is permitted to all classes, in Menado and throughout the greater part of the island it is absolutely forbidden to the natives.

(2) AGRICULTURE

(*a*) *Products of Commercial Value*

Cereals.—The staple food of the natives is rice, but it is carelessly grown, mostly on the 'dry' system. With care and better irrigation the output could be greatly increased and a higher quality produced. Maize is grown in the hills, and the sago-palm in the marshy areas.

Coffee.—The coffee grown in Minahasa has a high reputation, ranking with the best in the Dutch East Indies. In 1914 there were in Minahasa about 2,180 *bouws*[1] (3,815 acres) planted with coffee, either alone or with other crops.

Copra.—A quantity of copra is produced on the island, but the preparation of it is unsatisfactory. In the north the natives persist in the production of a mixed low-quality article, with the result that Minahasa copra has a bad name in the market. The chief demand is for sun-dried copra, which fetches a good price, and the Government has been urged to compel the natives to abandon their primitive method of roasting it in ovens. The Resident, however, has been reluctant to interfere. The difficulty is that there is practically no dry season in Minahasa, such as obtains at Macassar and in Java, so that there is little opportunity for drying the copra in the sun. On the other hand, it is urged that a Dutch company on Talisse has made very good sun-dried copra, and that by systematic supervision and more careful treatment a much better quality could be obtained in Minahasa.

At present (1918) the prospects of copra export to New York and San Francisco are bad, owing to the lack of freightage. In 1917 all the godowns at Menado were crammed with copra; prices were falling, but firms continued buying and sending to Macassar, where also there was a glut by the end of the year. The future prospects depend largely on the kind produced, for America wants only the best and will certainly not take inferior mixed. If, however, the quality can be improved, Menado may expect to do an excellent trade in copra, not only with America but with Europe and Japan, and likewise to export the *klapper* (coco-nut) oil prepared in Minahasa. The Oliefabriek Insulinde has been considering plans for setting up a factory at Menado.

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[1] 1 *bouw* = 1¾ acres.

Cotton.—Cotton cultivation in Celebes, Saleier, &c., has, at any rate for the time being, been killed by the importation of superior European yarn.

Kapok.—The natives of southern Celebes have shown remarkable energy in the cultivation of kapok. The kapok-tree (*Eriodendron anfractuosum*) grows much better when planted in bulk with maize or similar food crops between, than when planted along the roadside or as a support in pepper gardens, as is usual in many parts of the Dutch East Indies. It is also hoped to cultivate kapok on a large scale in Minahasa, where there were 10 *bouws* planted with the tree in 1914. There is a great demand for the produce in America. It is hoped that the establishment of oil factories like that opened by the firm of Manders, Seeman & Co. at Macassar in 1913 will enable the native to obtain a good price for his kapok seed.

Rubber.—In 1914 rubber, chiefly *Hevea brasiliensis*, was being grown on six estates in Menado, and occupied 635 *bouws* (1,111 acres) either alone or mixed.

Sugar and *tobacco* have been successfully grown.

Live-stock.—The chief domestic animals are buffaloes, which are used for ploughing and can be bought for £2 each. Horses of an excellent type, sturdy though small, are much used for transport, and cost a little more. Sheep and goats are rarely seen. The Alfurs eat pork, but the Mohammedan Macassars and Buginese are mainly vegetarian. Wild deer are plentiful and are hunted and eaten by the Torajas.

(b) *Methods of Cultivation*

The method of cultivation practised by the natives is primitive, and, where not under direct control of the Dutch, consists in merely turning over the surface of the soil to a depth of 10 or 12 inches. Sometimes light ploughs are used, but more often the soil is merely broken up with bamboo rods. In Minahasa, however, conditions have greatly improved. Artificial irrigation is backward, but an engineer has been appointed to prepare plans for an elaborate system for the whole island. The Torajas have adopted 'wet' cultivation of rice, where this method has been shown to them.

(c) *Forestry*

In the forests teak and ironwood abound, and gum-bearing and oil-producing trees of many kinds, such as the gum damar and badu, are numerous. As yet there is little official control over the timber, but Government exploitation of teak has begun on Muna island.

(d) *Land Tenure*

According to the native system, land is held in common by the tribe. In practice the individual retains his right in the land he occupies so long as he continues to cultivate it. If he fails to do so it reverts to the tribe. For further details see *Sumatra*, No. 83 of this series.

(3) FISHERIES

Fishing is one of the chief occupations of the Buginese and Macassars, who consume or sell locally most of the fish they catch. In the Sangi Islands, north-east of Celebes, fishing is also the occupation of a large proportion of the inhabitants. Large quantities of dried fish are imported into Celebes from south and east Borneo, and there is also some export, which amounted in 1913 to nearly 500 metric tons. The pearl fisheries on the east coast of Celebes are important, but the Celebes Trading Company, an Australian concern, devotes its attention chiefly to those in the neighbourhood of the Aru Islands, which are the principal pearl fisheries in the Dutch East Indies.

(4) MINERALS

Coal has been found in the neighbourhood of Macassar and to the west of the Latimojong Mountains, but has never been worked. The Government has, however, since 1912 reserved for its own exploitation two large areas in southern Celebes, where coal is known to exist. It maintains a stock of about 5,000 tons of coal at Macassar, imported from Cardiff and Sumatra.

Gold, so far as is known at present, constitutes the chief mineral wealth of Celebes. It is washed in primitive fashion by the natives in several districts, and in some parts ancient underground galleries are found, proving that it was worked on a considerable scale in former times. Eight concessions for gold-mining have been granted in the Residency of Menado. The most important mines are those of Paleleh and Totok, which in 1911 yielded gold to the value of £67,650 and £56,650 respectively. Both undertakings are said to be under-capitalized. Since 1912 the Government has reserved territory at Sassak for official gold prospecting. *Silver* is always found in conjunction with the gold, and in 1907 about three tons were produced in the island.

Copper is found near Gorontalo and worked by the natives, as are also *tin* and *nickel*, which occur in small quantities. The occurrence of *petroleum* has been verified in the Sadang valley in the north of the south-western peninsula, and near Lake Tempe, but the mineral resources of Celebes are as yet largely unexplored. Lack of labour and transport will be the chief obstacles to development for many years to come.

(5) MANUFACTURES

The Government salt monopoly does not apply to Celebes or to the adjacent islands, and a regular salt industry exists in the southern Residency. Near Macassar and on the island of Saleier salt-pans have been constructed, which in the dry season (August to October) provide work for numerous hands. Salt from this district supplies not only the whole of Celebes, but to a great extent the Moluccas, and also Portuguese Timor. Dutch Timor evaporates its own salt. In favourable years the production of salt in southern Celebes and Saleier averages some 5,000 tons, and the price varies from about 75 cents to fls. 6 the picul (133·3 lb.). In 1913 the Residency of Menado imported 1,262 tons of salt for private consumption (other than industrial).

Macassar oil is extracted by the natives from the seeds of the *badu*, but the export is diminishing, and at all times much of that sold by hairdressers was spurious. Domestic native industries include boat-building, smith's work in gold, silver, iron and copper, the plaiting of bamboo and rattans, wood-work, both useful and ornamental, and pottery-making.

There are several oil-mills, a rice-mill, a soap factory, several ice and mineral-water factories, shoe factories, and brick-works.

(C) COMMERCE

(1) Domestic

(*a*) *Principal Branches of Trade*

In almost every village in Celebes an active trade is carried on in copra, rattans, wax, gums, resins, oils, and hides. Villages on the coast deal also in dried fish, trepang (*bêche-de-mer*), and tortoise-shell. As in Java, the traders are Chinese, the natives living by the sale of their produce, usually on terms of barter.

As the Dutch bring the mountain districts under control they make the natives leave their fortified villages on the hills and live in *kampongs* by the river banks. They are thus more easily controlled and they also get better crops out of the level soil. Each new *kampong* has its *aloun-aloun*, a small stretch of turf, where markets are held.

(*b*) *Organizations to promote Trade and Commerce*

There are Chambers of Commerce at Macassar and Menado. These are official institutions, each consisting of five members, commercial men of standing appointed by the Government. There are also commercial unions (*Handelsvereenigingen*) at these towns.

(*c*) *Foreign Interests*

During the ten years that preceded the war, British merchants appear to have neglected Celebes as a field of operation, while German firms were obtaining a footing at all the ports, and, operating through nominally Dutch companies, were establishing a dominating financial interest both in import and export trade. Even British goods were largely imported through German firms, who held agencies for British manufacturers. The German Government maintains a vice-consul at Macassar and also at Menado, the British at Macassar only.

Very considerable attention is being paid to Menado as a future centre by the Japanese, who in this are following the efforts of the Dutch to advance the development of the place. Two important Japanese firms, namely the South Sea Trading Company (*Nanyo Boyeki Kaisha*) and the South Pacific Trading Company, are established there in large offices, and appear to have hopes of extensive business in north Celebes. Japanese influence in Minahasa is steadily increasing, and the Japanese already hold concessions for *klapper* (coco-nut) plantations well situated in the neighbourhood of Kema and elsewhere on the coast.

(2) Foreign

(a) *Exports*

Quantities and Values.—The exports from Celebes and Dependencies to foreign countries were valued approximately at £2,352,600 in 1913, but full and precise statistics are not available.

The vegetable products exported include coffee, copra, gum copal, gum damar, rice, maize, cajuput oil, cloves, mace, nutmegs, and rattans. The figures given in the official report published at Batavia in 1915 are inconsistent, sometimes referring to individual ports, sometimes to the island of Celebes, sometimes to Celebes and Dependencies. The export figures[1] given for Macassar port in 1913 were 1,630 metric tons of coffee grown by private owners, 2,622 metric tons of copal resin, 913 metric tons of gum damar, 615 metric tons of husked rice, 503 metric tons of kapok, 97 metric tons of mace, 243 metric tons of nutmegs, and 10,161 metric tons of rattans. In the same year 989 metric tons of gum damar were exported from Malili, and 755 tons from Gorontalo, while 2,541 tons of rattans were exported from the latter port. The export of maize from Celebes and Dependencies amounted to 7,717 metric tons. Figures are not available for the export of copra in 1913, but in 1914 37,258 metric tons were exported from Celebes and 33,398 metric tons from Menado. The export of mace from Menado in 1913 amounted to 102 metric tons.

Among animal products, buffalo and cowhides and deerskins are exported, and deer-horns. There is also an export trade in shells. The value of mother-of-pearl exported in 1913 was £12,600, while trocas, green snail, and other shells together amounted in value to £33,000, and turtle and tortoise shells to £15,000. There is an important export trade in bird-of-paradise skins. In 1913 the value of the skins exported was £127,359.

Countries of Destination.—Germany was the largest purchaser of better-class rattans, inferior qualities going to Hong Kong and Singapore. A large proportion of the gum copal is cleaned and sorted at Singapore before shipment to Europe and America. Quantities of copra go to Japan for soapmaking and similar purposes, but it is doubtful if this traffic will retain its importance after the war. The South Pacific Trading Company takes copra direct to Japan in its own motor schooners. About 80 per cent. of the deer-horns exported in 1913 went to Holland and Germany, while the younger horns are exported to China, where they are used as medicine and food. A product exported exclusively to China was the seaweed agar-agar. Holland was the chief purchaser of kapok and sandalwood. Of the 94,888 bird-of-paradise skins exported in 1913, 65,199 went to France, 13,946 to the United Kingdom, 7,706 to Germany, and 6,296 to Austria-Hungary. The mother-of-pearl shell went chiefly to France, the United Kingdom, and the United States; trocas and green snail shells chiefly to Austria-Hungary, France, and Japan, and turtle and tortoise shells to Japan, Hong Kong, and Singapore.

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[1] Figures for values are not available.

(*b*) *Imports*

Quantities and Values.—The total value of the imports into Celebes and Dependencies in 1913 was about £1,695,000. The chief articles imported are cotton, woven and unwoven, and cheap manufactured goods for domestic use. According to the British Consular Report, cottons imported at Macassar in 1913 amounted in value to £316,754, yarns to £169,740, woollen goods to £1,861. Rice is largely imported. In 1913 the Celebes Government imported 16,314 tons of rice from countries outside the Dutch East Indies, and Menado Residency imported 20,435 tons.

Countries of Origin.—The imports into Menado Residency are mostly carried in vessels of the Koninklijke Paketvaart Maatschappij, and the great bulk of them come from Singapore.

(D) FINANCE

(1) *Public Finance*

The finances of the Dutch East Indies as a whole are dealt with in *Java*, No. 82 of this series.

(2) *Banking*

The Javasche Bank has an agency at Menado and a branch at Macassar, where there are also branches of the Hong Kong and Shanghai Banking Corporation, the Chartered Bank of India, Australia, and China, the Mercantile Bank of India, the Nederlandsche Handel-Maatschappij, the Nederlandsch-Indische Escompto Maatschappij, and the Nederlandsch-Indische Handelsbank. German merchants formerly obtained all the facilities they desired from the Nederlandsche Handel-Maatschappij and other Dutch concerns. It has been proposed, however, to open branches of German banks both at Macassar and Menado after the war.

(E) GENERAL REMARKS

That Celebes possesses great potential wealth is certain, and there is every reason to suppose that in future its resources will be developed more rapidly than in the past. Commercial energy is being particularly directed to the northern part of the island, and it is to be expected that Menado will rapidly grow in importance.

A warning, however, should be added. It is true that the prospects of Celebes in respect to copra production are excellent. Moreover, Menado is on the direct route from Hong Kong to Australia, and Macassar occupies a central position in the Malay Archipelago. But it must not be forgotten that the coco-palm can be grown in profusion on practically every island in the Dutch East Indies, and it is probable that in a few years places little known at present will have become important centres of export. The rapid multiplication of motor craft, which is a certainty of the near future, and the possibility of development in aerial transport, will be important factors in the development of the archipelago, and it is difficult as yet to foresee the manner in which they may modify the direction of trade.

ISLANDS CONNECTED WITH CELEBES

Sangi Islands

The Sangi (or Sangir) Islands continue the north-east extension of Celebes towards Mindanao; they are set upon a long narrow ridge on the volcanic band, with great depths on both sides of them. They are volcanic, but fringed with recent coral formation (*karang*). Some of the volcanoes are still active, including Mount Abu (or Awu) on Sangi, which has had recent disastrous eruptions (1892, &c.), and the island of Ruang, west of Tangulandang. The most important islands are Sangi, Siau, and Tangulandang. Sangi (27 miles by 9 to 17 miles) has an area of about 300 square miles; it is mountainous in the north, but attains only moderate heights in the south; the coast is generally steep. Siau is extensively cultivated, containing nutmeg and coco-nut plantations. Apart from agriculture and fishing, its chief industry is the production of *kofo*, a fibre resembling Manila hemp, which is obtained from the wild banana-tree, and woven by the women. The volcanic soil makes both these islands exceptionally fertile. Tangulandang has two peaks of about 2,500 ft., the island sloping from them to the westward. Its principal industry is boat-building. Timber is plentiful on all the islands of the group.

The population of Sangi is about 45,000, mostly Christians; that of Siau, 24,000, including 8,000 Christians; that of Tangulandang, 6,000, of whom about half are Christians.

The chief port is Taruna, on Sangi, which is regularly visited by steamers of the Koninklijke Paketvaart Maatschappij. Copra and rattans are sent to Menado for trans-shipment.

Talaur Islands

The Talaur (Talaut, Talauer) Islands lie to the north-east. The chief of them is Karkelong, or Karekelang, which is 39 miles in length by 15 miles in width. Its southern part is said to reach a height of 2,300 ft. The coast is generally steep, except on the south, where it is fringed by a reef nearly a mile wide. Esang Bay and several others afford anchorage. Karkelong is divided by a strait of about a mile in width from Salibabu, which sometimes gives its name to the group. The inhabitants are described as a timid, inoffensive race of semi-pagans. The islands produce copra and various fibres, which the women weave.

Schildpad Islands

The Schildpad or Togian Islands lie in the Gulf of Tomini, between Cape Panjang in the north-eastern peninsula and Cape Api in the eastern peninsula. They run for nearly 80 miles east and west. The chief islands, Talata Koh, Togian, and Batu Daka, are separated by such narrow channels that they practically constitute one island, though the passages between them are difficult for navigation. Batu Daka is almost uninhabited. The other islands are hilly and densely wooded. Detached from the rest of the islands is Una Una (Nanguna), with an active volcano, the lower slopes of which are very fertile. The natives, who number about 2,000, are engaged in cultivating coco-nut trees, collecting the eggs of the *malco* (a variety of brush turkey), and fishing for turtle and trepang along the coasts.

Banggai Archipelago

The Banggai, or Peling, group lies off the eastern peninsula of Celebes, and belongs politically to the Residency of Ternate. The four chief islands are

Peling, Banggai, Labobo, and Bangkulu. All these are inhabited, but, with the exception of part of Peling, they are very imperfectly known. Peling is greatly indented, and is mountainous and wooded. It has many bays affording anchorage, and others obstructed by reefs. The population of the group is about 20,000; along the coasts are a mixed race of Mohammedans, and in the interior are uncivilized pagans who avoid the other inhabitants. Copra is the chief product, but the islands are rich also in valuable timber, especially ebony. Trepang and turtle abound. Mica is found on Peling. Trade consists in bartering produce for textiles.

Sula Islands

The Sula, or Sulla, Islands lie immediately to the east of the preceding group, and like them belong to the Residency of Ternate. They comprise three of considerable size, Taliabu, Mangola (Mangoli), and Sula Besi, and several smaller ones. The first two, together with Lifamatula, form a chain extending east and west for about 135 miles. They are high, mountainous islands, thickly wooded, but thinly populated. Taliabu, the largest, is little known. It has mountains 3,000 or 4,000 ft. high, and contains hot springs. Mangola, the middle island, is 65 miles long; it is narrow and generally high, the highest point being Mount Buja, in the west. Lifamatula, the eastern island, is uninhabited. More important than these is Sula Besi, which lies to the south. It is thickly inhabited and well cultivated.

The inhabitants number about 20,000, of whom about half are Mohammedans, who live on the coasts, and half are pagan Alfurs, who live inland. These last rarely approach the coast or mix with the Mohammedan population; they are most numerous on Taliabu. Rice is grown, but is mainly used in payment of taxes and in barter for textiles. The staple food is maize on Sula Besi, sago on Mangola and Taliabu. Coco-nut palms grow on the coasts of all the islands, and copra is now the chief export. With the excellent timber produced on the islands the natives build fair-sized sailing-boats. From the forests are also obtained wax, gum damar, and rattans. Coal of inferior quality is found on Sula Besi. The women of Sula Besi weave mats and *sarongs* of imported yarn. The same island contains the chief port of this group, Sanana, where there is a good anchorage.

Islands off the South-eastern Peninsula of Celebes

The most important of this group are Kabaena (Kubaina), Buton, Wuna, and Wowoni. They are separated from the peninsula by the Tioro and Wowoni Straits, both of which are dangerous. The Buton Strait, between Wuna and Buton, is very narrow, but is navigated by small craft that confine themselves to its waters. Buton is about 100 miles long, and 35 miles broad at its widest part. Along its axis runs a chain of limestone hills, 600 or 700 ft. high. It is penetrated on the eastern side by a great bay, Kali Susa or Dwaal Bay, with some good anchorage but full of dangers. The population numbers about 10,000; the natives build praus, and collect turtle, pearls, and sharks' fins. The chief town is Buton (or Bolio), which is visited by vessels of the Koninklijke Paketvaart Maatschappij. The chief exports are timber, cajeput oil, cotton, coffee, hides, agar-agar, and bees-wax; the imports are yarns, rice, opium, iron-ware, and pottery.

Wuna is less hilly, and its hills run less definitely north and south; it possesses valuable teak forests, and on it, as on Buton, cotton is grown. Kabaena consists partly of limestone, partly of volcanic hills. The islands of this group have not been much explored.

Salaier

Salaier (Saleier, Saleijer, Salajar), which is 50 miles in length by 8 miles in breadth, is an extension of the eastern mountain-chain in the southern promontory of Celebes. It is traversed by a chain of mountains reaching 2,000 ft., which descend steeply to the sea on the east side, and gradually slope to the flat plain on the west. Its streams can be entered only by praus.

It is a populous and prosperous island. It is inhabited mainly by Macassars, who number more than 75,000. The Salaierese are bold seamen; they build their own *praus* and sell many of them in Celebes, and there is constant *prau* traffic between Salaier and Macassar, Bonthain, and Sinjai. The women weave excellent *sarongs*, and both men and women make sail-cloth. The fertile plains along the west coast are especially devoted to the cultivation of cotton, but also to some extent to that of tobacco, Manila hemp, and coco-nuts for the Macassar market, and a little indigo, coffee, and Spanish pepper are likewise grown. Rice, barley, and maize are cultivated, but there is not enough rice for local requirements. In the marshes are fishponds and salt-pans. On the shores are found turtle and trepang.

A good road runs the whole length of the west coast. There are daily markets at Salaier town (known also as Bentang and Panggilijang), Padang, and Tile-Tile. The chief export from the island is copra; Macassar oil and ricinus (castor) oil are prepared for export; fish, both fresh and dried, is exported, and there is an important trade in salt. Vessels of the Koninklijke Paketvaart Maatschappij call at Salaier town. The island owes much of its prosperity to its proximity to Macassar.

Spermunde Archipelago

This archipelago lies off the west coast of Celebes, north of Macassar, where the sea is comparatively shallow. It consists of a great number of low islands, surrounded by coral reefs. Coco-nuts are grown, but the sandy soil is unsuited for other produce.

AUTHORITIES

HISTORICAL

A full list of Historical Authorities is given in *Java*, No. 82 of this series.

ECONOMIC

British Diplomatic and Consular Reports, Annual Series :
No. 5083. *Netherlands East Indies, Trade, &c.*, 1912.
No. 5325. *Netherlands East Indies, Trade, &c.*, 1913.
Cotton Goods in the Dutch East Indies (United States Department of Commerce, Special Agents' Series, No. 120).
Encyclopaedië van Nederlandsch-Indië. [1st ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden, [1895–1905].
—— [2nd ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.
Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.
In- en Uitvoer, Handels-Economisch Weekblad voor Nederland en Kolonien. The Hague, 1876, &c.
Jaarboek van Nederlandsch-Indië. Batavia, 1916.
Jaarcijfers van Nederlandsch-Indië. The Hague, 1914.
Mededeelingen van het Bureau voor de Bestuurszaken der Buitenbezittingen. The Hague, 1904–14.
Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.
Verslag omtrent Handel, Nijverheid en Landbouw van Nederlandsch-Indië gedurende 1914. Batavia, 1915.
BROWN, J. M. *The Dutch East.* London, 1914.
CABATON, A. *Les Indes néerlandaises.* Paris, 1910. (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911.)
WALCOTT, A. S. *Java and her Neighbours.* New York and London, 1914.
WRIGHT, A. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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DUTCH TIMOR

AND THE LESSER

SUNDA ISLANDS

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I. GEOGRAPHY PHYSICAL AND POLITICAL

General Description

Timor, divided between Portugal and the Netherlands, and the other smaller Sunda Islands[1] lie east of Java between 114° 25′ and 127° 20′ (the Dutch territory not extending beyond 125° 15′) east longitude and between 8° and 11° south latitude. Bali and Lombok form one Residency, Sumbawa and western Flores belong to the Residency of Celebes and Dependencies, while the Residency of Timor and Dependencies includes the rest of Flores and the small islands as far east as Alor, together with Sumba, the Savu Islands, and Rotti (Roti). The south-western islands (Wetar, &c.), east of Alor, belong to the Residency of Amboina and are treated in *Dutch New Guinea and the Molucca Islands*, No. 87 of this series.

DUTCH TIMOR

(1) Position and Frontiers

Timor is the easternmost of the Sunda Islands. The Dutch portion consists of the western half of the island, with the exception of the Ocussi enclave in the northern part, which belongs to the Portuguese. The island of Kambing is also Portuguese. The boundary between the main areas of the respective territories is a line running across the waist of the island, with a large loop to the eastward at about the middle, and ending in the mouths of the Biku and the Talas, on the north and south coasts respectively (see *Portuguese Timor*, No. 80 of this series).

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[1] 'Sunda Islands' is the designation which, owing to Portuguese influence, has often been given loosely to the whole of the Dutch East Indies, and Marsden (*History of Sumatra*, London, 1784) and Raffles (*History of Java*, London, 1817) both use the term in this sense. The islands between Timor in the east and Java in the west, comprising Alor, Adunara, Lomblen, Pantar, Savu, Rotti, the Solor Islands, Flores, Sumba, Sumbawa, Lombok, and Bali, are now called the 'Lesser Sunda Islands', to distinguish them from the four greater ones, Java, Sumatra, Borneo, and Celebes; but modern Dutch geographers prefer to divide the archipelago simply into 'Java and Madura', and the 'Outer Possessions'.

These frontiers, which largely follow natural features, and at the same time are supposed to coincide with the territorial confines of the native states (*rijkjes, reinos*), are determined chiefly by the Convention of October 1904, but in part by M. Lardy's Sentence Arbitrale of June 1914. Dutch Timor occupies an area of about 6,000 square miles.

(2) SURFACE, COAST, AND RIVER SYSTEM

Surface

Timor differs considerably in physical characteristics from the rest of the Lesser Sunda group, but information about the interior is generally deficient.

The island as a whole is traversed by a series of parallel mountain chains, whose outlying spurs, especially on the north coast, in many places approach the sea. The mountains of Dutch Timor are in general somewhat lower than those of the Portuguese part of the island, but otherwise resemble them in their steep irregular outlines. It is not now believed that there are any volcanoes, but there are numerous mud geysers, perhaps the sign of former volcanic activity.

The fertility of the soil and the cultivable area are discussed on pp. 26, 27. (See also *Portuguese Timor*, No. 80 of this series.)

Coast

The coast of Dutch Timor is about 450 miles in length, but about one-third of the north coast is taken up by the seaboard of the Portuguese Ocussi enclave.

The north and west coasts are deeply indented and generally steep; the south coast is flat in its eastern part, and backed by lagoons and mangrove swamps, but towards the west is steep and rocky, with no noteworthy indentations except that of Noï Mina Bay. The most considerable inlet in all Timor is Kupang[1] Bay on the west coast, which is 12–15 miles long, and contains some small islands. There are coral reefs in many places along the coasts. Apart from the ports of call of the Dutch steamers, Kupang and Atapupu, there are a good many places on the west and north coasts where anchorage may be found at certain seasons. Kupang itself is dangerous for ships in the north-west monsoon.

River System

Owing to the configuration of the country and the porous character of the soil, the rivers, which generally flow north and south with short courses and a rapid change of level straight to the sea, are unimportant. A few of them are navigable for small native boats at their mouths. Only one or two, chiefly on the south, have a constant supply of water.

(3) CLIMATE

Two seasons may be distinguished, that of the south-east monsoon, lasting from May to November, and that of the north-west monsoon, from December to April. There are short periods of transition between the two, with variable winds. During the south-east monsoon practically no rain falls on the north side of the mountains, but the north-west monsoon is accompanied by violent squalls and downpours. The heaviest rainfall occurs from December to February, the total amount being some 40–60 inches (1,020–1,525 mm.) a year. About 37 per cent. of this falls in January and February.

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[1] Spelt Koepang by the Dutch, in whose language *oe* is used to indicate the long *u* sound.

The mean temperature does not vary much between the two seasons, but the daily variation is considerable, being especially marked at the beginning of the south-east monsoon. The hottest regions are the plains and coasts, where the highest temperature varies between about 80° F. and 100° F. (26·6° C. and 37·7° C.), temperatures over 100° F. being exceptional. The western end of the island seems, from the figures at present available, to be somewhat hotter than the east. The interior, owing to its elevation, is cooler than the coast.

(4) SANITARY CONDITIONS

No details are known as to health conditions in Dutch Timor. The coast is malarial, but the interior in general seems to be not unhealthy. Skin diseases are common in central Timor.

(5) RACE AND LANGUAGE

The population of the whole island is composed of Malay, Papuan, and Polynesian elements, and is usually divided into the Belonese in the centre and east and the Timorese in the west, although this classification is far from being generally accepted. The Belonese are said to have affinities with the Papuans; the Timorese are said by some authorities to be connected with the Malays, but these facts are denied by others.

In the extreme west dwell the Kupangs, who also inhabit Semaoe (Samaoe). These may be Timorese crossed with the population of neighbouring islands, and are distinguished as a group by their noticeably lighter colour, slenderer build, and wavy hair. In the west there are also found native colonists from Rotti and Savu.

Besides the natives there are a few Dutch, and there are also a fair number of Chinese and Arabs who are occupied in commerce.

The commonest languages are Dawan in the west and Tetum in the east of the colony, but many other dialects and languages are known (e.g. Marai, Helon), the relations of which to each other and to Malay and Papuan are still obscure. In addition Malay (introduced by the Dutch) is spoken by foreign colonists in Kupang.

(6) POPULATION

The estimated total of the native population for the whole Residency (which includes the eastern part of Flores, the Alor and Solor Islands, and others) was about 950,000 in 1912, so that it is not probable that Dutch Timor can claim more than 350,000 to 380,000 inhabitants. An estimate dated 1901 makes the number about 500,000, but this appears to be a mere guess.

The only considerable town is Kupang, at the western end of the island. Otherwise the natives mostly live in settlements of not more than ten houses, which are usually situated in places difficult of access, owing to the general feeling of insecurity.

LESSER SUNDA ISLANDS

(1) Position and Extent

The Lesser Sunda Islands comprise the following: Bali, Lombok, Sumbawa, Flores, Solor, Adunara, Lomblen, Pantar, Alor, Sumba (Tyendana, or Sandalwood Island), Savu, and Rotti (Roti), with the smaller islands dependent on them.

With the exception of Sumba and the two small islands of Savu and Rotti, these islands form a chain running east and west, about 700 miles in length. The islands of Sumba, Savu, and Rotti, together with Timor, constitute a separate southern line at the eastern end of the main chain.

The main chain falls roughly between 6° and 9° south latitude, while Sumba, Savu, and Rotti fall between 9° and 11° south latitude. The islands lie between the islands of Sumatra, Borneo, and Celebes and the continent of Australia; the northern shores of the chain are washed by the Sunda or Flores Sea, while the southern coast-line borders on the Indian Ocean. On the west the chain is separated from Java by the Bali Strait, and on the east from Timor by the Ombai or Alor Strait.

The areas of the islands are:

Bali	2,242 square miles
Lombok	2,187 ,,
Sumbawa	(about) 5,300 ,,
Flores	5,511 ,,
Solor	figures not available
Adunara	,, ,, ,,
Lomblen	,, ,, ,,
Pantar	,, ,, ,,
Alor	,, ,, ,,
Sumba	5,290 square miles
Savu	239 ,,
Rotti	651 ,,

Of the islands for which no area is given, Alor is the largest, and is about half the size of Lombok. The combined areas of the islands are said to be about half that of Java.

(2) SURFACE, COASTS, AND RIVERS

Surface

The predominant physical feature of the Lesser Sunda Islands is a line of volcanic mountains running through the main chain from end to end. The mountains are highest at the western end, the greatest height being the isolated peak Renjani in Lombok (about 12,300 ft.). Several other peaks attain to heights between 7,000 ft. and 10,000 ft. The general trend of the mountain chain is from east to west, but there are local variations in the different islands.

Throughout the chain the volcanic mountains form the dominating feature. Sumba, Savu, and Rotti, however, are off the main volcanic line, and, though the fact is not definitely established, it is probable that there are no volcanoes and no high peaks in any of them.

In some of the islands, notably in Bali, Lombok, and, it is thought, in Sumbawa, there appears a parallel ridge to the south, of much lower altitude than the main mountain chain. All the islands of the main chain are in general mountainous, with plateaux between the mountain peaks, and alluvial strips at intervals along the coasts.

In Bali there are several active volcanoes, including Batur, which was in eruption in 1905. An eruption of Tambora in Sumbawa caused immense damage in 1815, besides reducing the height of the peak from 13,000 ft. to 9,000 ft.

Coasts

In the Lesser Sunda Islands the volcanic mountains approach very near to the coasts, and on both the northern and southern sides the sea reaches a great depth.

The northern coasts of Bali and Lombok are straight and regular, and contain no inlets. In the next island to the eastward, Sumbawa, Saleh Bay penetrates inland for 51 miles, with an average width of 11½ miles. In the same island on the east side of Mount Tambora is the Bay of Dompo or Sanggar, and farther east still is the land-locked Bay of Bima. Its shore is generally precipitous, but at the port of Bima becomes flat and marshy. The north coast of Flores varies considerably; generally it rises abruptly to a high hilly country, but in Maumere Bay and Lapeh Bay it is low.

The north coast of Sumba is low and sandy, with hilly country rising in flat terraces behind. There are many capes and bays and good harbours, the best being Nangamesi Bay.

The southern side of the chain contains fewer bays, the only one of importance being Tjempi (Chempi) Bay on the south coast of Sumbawa. In the same island, a little farther east, is Waworada Bay. The south coast of Flores is fairly regular and steep, the chief bay being that of Endeh, with an island of the same name in the middle of it. In Sumba also the south coast is generally precipitous.

Of the straits between the islands of the chain, the following only are of importance. Bali Strait, between Java and Bali, is only 3 miles wide at the northern end, but widens to the south. The Strait of Lombok is both wide and deep, and the chief inlet, Labuan-Tering (or Labuan Tjerik) Bay, is situated on the

Lombok side. Between Lombok and Sumbawa is the Alas Strait, with one small but secure harbour at Piju, on the Lombok side.

Rivers

The rivers of the Lesser Sunda Islands are unimportant. Many of them during the north-west monsoon are mountain torrents rushing down to the sea through deep ravines, but during the south-east monsoon many dry up. None of them is of use for navigation, although there are a few, such as the Kambera in Sumba and the Reo in Flores, which are navigable for small craft a mile or so inland. Others, such as those in northern Lombok, are of great use for cultivation.

(3) CLIMATE

The mean annual temperature is high, being 78°–80° F. (25·5°–26·6° C.). There is a very small monthly range and a small daily range, which increases as one progresses eastwards along the islands. There are no figures for the Lesser Sundas, but the temperature probably approximates to that of the eastern peninsula of Java, where the mean temperature for Pasuruan is 80° F. (26·6° C.) and for Assembagus (near the north coast) 79° F. (26 C.). Kupang in Timor at the eastern end of the Lesser Sundas has much the same mean temperature as Assembagus.

During the north-west monsoon Bali and Lombok have the greatest rainfall, while Flores is the driest region. During the south-east monsoon Bali is wettest with a very small rainfall, while in Sumba in July there is no rain. The average amount of rainfall in the Lesser Sundas during the north-west monsoon is only 35·5 in. (90·5 cm.), and during the south-east monsoon the figure sinks to 6·5 in. (16·5 cm.).

There is an average amount of 16 in. (40·6 cm.) evenly divided between the two transitional periods. A fresh sea wind blows all day and is succeeded at night by a light land breeze. There are no cyclones.

(4) SANITARY CONDITIONS

Malaria in its various forms is very prevalent, and occasionally there are violent outbreaks lasting for several years in various localities, from which the local form of the disease often takes its name. Other endemic diseases, such as cholera, beri-beri, and dysentery, also occur occasionally in a severe form. Small-pox is less common since the introduction of vaccination, but the lack of cleanliness among the pig-keeping natives of Bali has occasioned epidemics there, and a serious outbreak of the kind occurred in 1913.

(5) RACE AND LANGUAGE

The chief peoples inhabiting the Lesser Sunda Islands are the Balinese and the Sassaks.

Balinese.—Bali and western Lombok are inhabited by descendants of the Hindu Javanese, who call themselves Wong Majapahit, to distinguish themselves from the Bali-Aga, who are thought to be descendants of the ancient indigenous population and live in villages in Sangsit, Sembira, southern and western Lombok, and Krobokan. In physique they are a little slighter than the Javanese, but strong. The Balinese in Bali number about 800,000, and their language is very like Javanese.

Sassaks.—These people mainly inhabit eastern Lombok, though they are found in other parts of the island, and also in the western peninsula of Sumbawa. Some years ago their numbers were estimated at 320,000 in Lombok, but in Sumbawa their numbers are unknown, although they probably do not amount to more than one-eighth of those in Lombok.

The language of the Lombok Sassaks is very different from that of the Balinese, although it contains many Malay and Javanese words.

In the Sumbawa peninsula there is also a large admixture of Macassars, Büginese, Chinese, and Arabs, together with a few Europeans.

Natives of Sumbawa, Flores, Solor, Lomblen, Adunara, Alor, and Pantar.—Little is known of the peoples inhabiting the islands to the eastward of Lombok. While the natives of the three remaining districts of Sumbawa are of a homogeneous Malay type, the islands of Flores, Solor, Lomblen, and Adunara farther east constitute a zone in which the Malay merges into the Papuan.

Malay, which is the *lingua franca* of the Dutch East Indies, is understood everywhere along the coasts, but among the natives of the interior there are many different languages and dialects spoken in various though not widely separate localities, e. g. in Alor there are twenty.

(6) POPULATION

Distribution

According to the estimate of 1912 the islands of Bali and Lombok, which constitute a separate Residency, had a population of approximately 1,207,000, which is more than five times as dense as that in the other islands of the group. In 1905 there were in Bali and Lombok 1,807 Chinese, 704 Arabs, 143 other Oriental foreigners, and 119 Europeans. The populations of some of the islands have been roughly estimated as follows: Sumbawa, 100,000; Sumba, 200,000, the western part of the island being the most thickly populated; Flores, 300,000; Solor and Lomblen, 32,000; Adunara, 25,000; Alor, 50,000; Pantar, 1,900; Rotti, 60,000. One estimate puts the population of Savu at 26,000, and another at 15,000.

Towns

The chief towns of the Lesser Sundas are on the north coasts of the islands. Singa Raja in Bali had in 1905 a population of about 9,000, of which nearly 1,000 were Chinese. Negara, a little way inland on the Bali side of the southern entrance of the Bali Strait, had in 1905 a population of 6,651.

Except Mataram, the capital of western Lombok, which has a population of only 300, no other town in Lombok is given in the official tables, but it is probable that Ampenan on the west coast has a considerably larger population.

Bima on Bima Bay on the north coast of Sumbawa has a population roughly estimated at 10,000.

In Flores, Larantuka, on the peninsula at the eastern end, had, in 1905, a population of 4,663, almost entirely composed of natives.

Waingapu in Sumba and Baä in Rotti had each about 1,000 inhabitants.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY

1597. First Dutch relations with Bali.
1613. First Dutch relations with Timor.
1618. First Dutch relations with the Solor Islands.
1646. Dutch authority recognized in the Solor Islands.
1667. Dutch authority recognized in Flores.
1674. First Dutch relations with Lombok.
1692. Lombok conquered by Bali.
1749. Portuguese influence in western Timor finally overcome.
1756. Alliance made by Dutch with native rulers of Timor and other islands.
1778. 13,000 Balinese slaves officially reported at Batavia.
1811–16. Dutch part of Timor and Bali under British rule. Abolition of slave-trade.
1816. Dutch Timor restored to the Netherlands.
1839. Treaty acknowledging Dutch sovereignty in Bali.
1843. Acknowledgement of Dutch sovereignty in Lombok, subsequently repudiated.
1851. Dutch hold on Flores and Solor Islands consolidated.
1854. Timor boundary treaty between Netherlands and Portugal.
1859. Portuguese claims in Flores, Solor, and Alor groups ceded to the Netherlands.
1882. Bali and Lombok form a separate Residency.
1890. Punitive measures in Flores.
1894. Natives of Lombok invoke Dutch aid against Balinese.
1899. Revision of Timor boundary treaty.
1904. Punitive expeditions to Bali to put down piracy.
1905. Revision of Timor boundaries.
1908. Strong punitive measures in Flores.
1914. Military withdrawn from Bali.

TIMOR

THE Dutch first came to Timor in 1613, but found, as elsewhere, powerful rivals in the Portuguese, who were already established there, and whose influence in the western portion of the island was not finally overcome until 1749; in 1756 new alliances were contracted by the Dutch with fifteen native rulers in western Timor, but the eastern portion continues Portuguese to this day.

During the British occupation of Java the Dutch portion of Timor also surrendered to England—to be restored to the Netherlands after the fall of Napoleon. In 1854 a treaty was concluded, but ratified only in 1859, determining the boundary between the Dutch and Portuguese territories; differences concerning the unsatisfactory position of certain enclaves led to a revision that was ratified in 1905,[1] but the retention by the Portuguese of the Ocussi enclave still causes acute friction.

There was serious trouble in Portuguese Timor in 1912, owing to the Portuguese, it was alleged, giving arms to the natives to assert their claim to a few square miles of land on the eastern border of the Portuguese enclave in the Dutch part of Timor. There was a widespread revolt in the interior of Portuguese Timor. The capital, Dili, was believed to be in danger; and the Governor went on board a warship that had come from Macao, while a great number of refugees fled from Portuguese Timor into Dutch Timor. Eventually the matter was referred to the Hague Arbitration Court, and was settled for the time being by the Sentence Arbitrale of M. Lardy in June 1914.

BALI

The earliest relations of the Dutch with Bali date back to 1597; but they never obtained a firm footing there till quite modern times. Contracts were indeed made by the Dutch East India Company with the native rulers; but they related chiefly to the supply of slaves, an official return compiled at Batavia in 1778 showing that not fewer than 13,000 Balinese were then in bondage in and around that town. This trade was abolished during the period of British rule in Java (1811–16). After the restoration of the colonies to the Dutch, the latter were long regarded with distrust in Bali, and only in 1839 was an agreement concluded whereby Dutch sovereignty was acknowledged by all the native rulers. But before two years had elapsed this agreement was violated, and three expeditions had to be sent to Bali before Dutch rule was firmly established in 1849. In 1882 Bali, which had since 1849 been administered from Java, was raised, together with Lombok, to the status of a separate Residency.

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[1] F. Fokkens, *De nieuwe regeling der grenzen tusschen Nederlandsch en Portugeesch Timor*. The Hague, 1914.

An act of piracy committed in 1904 upon a stranded schooner owned by a Chinaman, and the consequent demand for indemnity made by the Dutch, resulted in a series of risings that enabled the Netherlands, after punitive expeditions, to gain a still firmer hold over the various native rulers in the south of the island.

Reforms were gradually introduced into the internal administration. Slavery was restricted with a view to its speedy total suppression, and the opium trade was brought under Government control. By 1914 the military evacuation of the island was made possible by the substitution of a service of armed police.

The whole of Bali and Lombok have been tranquil recently, but so late as May 1917 there was a riot in the district of Karangassem in Bali owing to about 125 natives having been imprisoned for refusing to perform statutory labour. The troops fired upon the mob, with the result that 5 rioters were killed and 7 wounded.

LOMBOK

The Dutch East India Company had its first intercourse with Lombok in 1674, a treaty being made with the native rulers in 1675, but no effective footing was established, and the island, falling to Bali as a conquest in 1692, remained vassal until 1843; in that year a contract was signed by the ruler of Mataram, a small state then paramount in the island, acknowledging the sovereignty of the Netherlands; but this was repudiated a few years later.

Little progress in extending their authority was made by the Dutch for the next half-century, but in 1894 they took advantage of the often-repeated appeals of the Sassaks—a feeble race, natives of Lombok, long held in subjection by their Bali conquerors—and sent an expedition that after severe fighting succeeded in conquering the Balinese resistance. The island was thereupon incorporated as a division of the Residency of Bali and Lombok, to which it had nominally belonged since 1882. Since their conquest the Sassaks have given the Dutch Government more trouble than the defeated Balinese; the latter have proved peace-abiding subjects, but the former have attempted to take undue advantage of the privileges accorded them.

SUMBAWA

Sumbawa was one of the dependencies of Macassar that refused to sign the contract forced upon the Sultan of that State by Speelman in 1667; force had therefore to be employed, and an agreement was signed, and a Dutch post established, in 1674. The post was, however, abandoned in the following year.

For nearly a century Sumbawa, which became an ally of the Dutch East India Company by virtue of the 1674 agreement, gave that body much trouble by reason of the wars which it waged with neighbouring islands, but in 1765 an entirely new agreement was entered into; this has since been twice revised—in 1858 and 1875.

SUMBA OR SANDALWOOD ISLAND

Already in the middle of the seventeenth century the Dutch were shipping sandalwood from this island; but it was not until 1756 that contracts were made with various rulers of Timor and other neighbouring islands. A Government report upon the resources of Sumba, issued in 1759, spoke of the possibility of obtaining annually 'a cargo of sandalwood and a good quantity of slaves'. But troubles with the natives led the company to abandon relations with the island.

Fresh agreements were made early in the nineteenth century and renewed in 1860. In 1866 Dutch officials were first appointed to reside in the island; owing, however, to the constant internecine quarrels of the natives, their functions remained for a long time restricted to the purchase of horses for the Government.

FLORES AND THE SOLOR ISLANDS

A treaty was made in 1618, and renewed in 1646, by which Dutch rule was recognized in the Solor Islands. Speelman in 1667 appears to have been the first to conclude a permanent treaty with the ruler of Macassar that acknowledged the company's authority over Flores, and a Dutch post-holder was soon after placed in Endeh Bay. But the influence of Portugal remained very strong both in Flores and the Solor Islands, even well into the nineteenth century, Larantuka being officially acknowledged a Portuguese possession by the Dutch in 1818. A Dutch maritime expedition in 1838 led to the submission of many native rulers in the following year. In 1859 an agreement was made with Portugal, by which that country formally ceded all its claims in Flores; its entire possessions there and in the Solor Islands had actually been in Dutch hands since 1851.

From 1859 down to the first decade of the present century the Dutch authorities in Flores and the Solor Islands have had to contend uninterruptedly with rebellion; in 1890 and again in 1908 the military operations assumed important dimensions, and even to-day conditions cannot be regarded as entirely peaceful, though on the whole the political outlook is favourable.

III. SOCIAL AND POLITICAL CONDITIONS

DUTCH TIMOR

(1) Religious

The natives are mostly heathens. In some parts, notably in the west, there is a fair number of professing Protestants; in others, especially to the east, a leaven of professing Catholics. At bottom nearly the whole population is pagan, and consists of worshippers of ghosts and fetishes, the Belonese being apparently less fanatical than the Timorese.

(2) Educational

In the Residency of Timor and Dependencies in 1913 there were 21 Government schools for natives with 2,704 pupils, and 136 schools classed as 'private' with 7,551 pupils. (See also *Sumatra*, No. 83 of this series.)

LESSER SUNDA ISLANDS

(1) Religious

The religion of the Balinese is Hindu, and is much mixed up with animistic beliefs, the Brahmanism being tempered with Buddhism; Siva is worshipped, and Krishna and Vishnu, with innumerable other gods besides. Neither Mohammedanism nor Christianity makes much headway. Of the four castes, Brahmins, Ksatua, Wesja, and Sudra, the three first comprise the nobility and the Sudra common people. The last class is not despised, and the nobility can marry into it.

The Sassaks of eastern Lombok are nominally Mohammedans, and in certain particulars adhere strictly to the observances of their faith, being otherwise influenced by animistic beliefs. Efforts to convert them are generally unsuccessful, and intermarriage between the Balinese and Sassaks is only occasional. In the islands of Flores, Solor, Lomblen, and Adunara the majority of the natives are pagans, the chief observances being connected with worship of the dead. The Mohammedans are found chiefly on the coasts where colonists from Celebes and other parts of the archipelago have established themselves, after first driving the original population into the interior. In Endeh there are a few surviving Roman Catholic practices, relics of Portuguese missionary activities.

(2) EDUCATIONAL

In Bali and Lombok in 1913 there were 14 Government schools for natives with 2,382 pupils, and 5 'private' schools with 307 pupils. The instruction in the Government schools is always secular. (See also *Sumatra,* No. 83 of this series.)

In June 1916 the Government arranged for 13 pupils from Sumbawa to be sent to Macassar to the training school for native teachers, and among those chosen were the eldest son of the ruler of Sumbawa and the brother of the Sultan of Bima.

IV. ECONOMIC CONDITIONS

DUTCH TIMOR

(A) MEANS OF COMMUNICATION

(1) INTERNAL

(*a*) *Roads*

SINCE 1914 the Dutch East Indian Government is believed to have given considerable attention to the development of inland communication in Timor, but precise information as to what has been accomplished is not yet obtainable. When, about 1905, particulars of all the roads and bridges in the Outer Possessions were tabulated, the roads kept up by the Government in Dutch Timor were less than 4 miles in length. There were two plate-girder and lattice-girder bridges, each with a length of 115 ft. Small culverts numbered 36. Ten bridges were erected or renewed between 1896 and 1903.

Communications with the interior of Dutch Timor, at any rate till quite recently, were limited to native tracks. No roads worthy of the name exist anywhere except around the port of Kupang. Statute labour is requisitioned for road-building, and some progress has been made with the construction of a road from Kupang to Atapupu.

There are no railways or tramways in Dutch Timor.

(*b*) *Rivers*

Though there are many rivers which are navigable by native vessels near their estuaries, there is no stream in Dutch Timor which does not dry up almost completely between May and November, during the period of the south-east monsoon. During the north-west monsoon the streams become raging torrents. The little River Kupang, which runs through the capital of Dutch Timor, has been dammed in order to provide washing water.

(c) *Posts and Telegraphs*

Since the interior of Dutch Timor is largely composed of steep mountains and occupied by savage and turbulent tribes, there is no regular postal service, except in the immediate neighbourhood of Kupang and Atapupu. Military telegraphic communication is maintained whenever possible with Kupang. There were 1¼ miles of permanent telegraph wires in Timor at the end of 1914. Statute labour can be exacted, if necessary, for the conveyance of official correspondence.

(2) EXTERNAL

(a) *Ports*

The only recognized ports are Kupang and Atapupu.

Kupang lies on the south side of Kupang Bay. The roadstead is good, but the port is considered in some respects inferior to Dili in Portuguese Timor. The north-eastern part of the bay is very shallow, but there is excellent anchorage close to the shore at Kupang, with a minimum depth of 4 fathoms. During the north-west monsoon, vessels must often seek refuge in the Strait of Samau, on the eastern side of the island of that name, opposite Kupang. It is then necessary for passengers to embark and disembark at Tenau, about 2½ miles from Kupang. Kupang is the seat of the Residency of Timor and Dependencies, and the Dutch East Indian Government maintains a garrison at Fort Concordia. The Rajah of Kupang lives on the island of Samau.

Atapupu, near the Portuguese frontier, has a natural harbour with a good depth of water. A representative of the Government is stationed there, and the little town contains many Chinese traders and a Catholic mission.

Except in *Noï Mina Bay*, the south coast, which is stormy, offers no shelter to vessels, and is generally avoided, especially during the south-east monsoon.

No statistics of the tonnage of shipping visiting the ports of Dutch Timor are available. Exports go mainly to Java and Celebes, but small quantities of produce go to Japan, China, and Australia.

(*b*) *Shipping Lines*

The Koninklijke Paketvaart Maatschappij, which was founded in 1890 and is subsidized by the Government, is bound to maintain regular services between Java and specified ports in the Outer Possessions, including Kupang and Atapupu. Between Kupang and Java there is a regular monthly service, and there are also services to Macassar and Surabaya. The company is under an obligation to carry mails free of charge and to transport servants of the Crown and Government property according to a fixed tariff. It maintains a steamer service connecting the Dutch East Indies with Singapore and Australia; it is prepared to increase its service to and from Kupang or any other port as required.

It is only since 1912 that ships of all nationalities have been permitted to take part in the coasting trade.

(*c*) *Wireless Communication*

The newly erected wireless telegraph station at Kupang, opened to the public in August 1913, is an immense boon to the island, which has never been in cable communication with the outer world.

(B) INDUSTRY

(1) Labour

Certain portions of Timor, round Kupang and Atapupu, are under direct Government administration. In these areas statute labour can be exacted for the construction, repair, and maintenance of roads, for the construction and guarding of Government buildings, such as travellers' shelters and watch-houses, and for other purposes,[1] up to a limit of 36 days' service in the year. In 1915 there were 6,317 persons liable to statute labour, and they gave an aggregate of 115,000 days' service.

The Timorese are not a race trained to habits of industry during centuries of subjection, like the Javanese or the natives of Bali and Lombok. They cannot be induced to work hard for any reward that Europeans can offer. Their wants are limited and are so bountifully supplied by nature that they are apt to sink deeper and deeper into sloth and self-indulgence, while even such incentive to activity as was afforded by intertribal warfare has become greatly restricted under the Dutch Government.

The native Rajahs are in theory pledged to foster agriculture and industry. They nominally accept the overlordship of the Dutch East Indian Government, but most of them show little sense of their obligations. They take toll of the agricultural produce and wax, &c., obtained by their subjects, but pay no taxes to the Government, either in money or in kind. Such a system as this is not likely to stimulate industry, and the profits of a few individuals bring no advantage to the community as a whole.

The differences between the Portuguese and Dutch

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[1] See *Sumatra*, No. 83 of this series.

Governments, which have continued for more than three centuries in Timor, and which have not been finally settled even by the frontier delimitation of 1915, have militated against settled government in the island, and consequently against systematic industry.

(2) AGRICULTURE

(a) *Products of Commercial Value*

Vegetable Products.—Agriculture among the natives is practically limited to the cultivation of maize, which is the staple food of the villagers, and of a little rice, which is regarded by them more as a luxury than a necessity. In 1913 Timor imported 2,037 metric tons of rice and exported only 1,078 metric tons. Wheat and millet have been successfully grown. Plentiful supplies of food are obtained from the sago-palm, coconut palm, and others. In 1913 Timor and Dependencies exported 6,617 tons of copra. The lontar-palm furnishes a palm-wine, called *laru*, and its leaves are used for making mats, baskets, and hats. The bamboo is also much used for building and plaiting.

Dutch planters have made extensive experiments with coffee, and Timor coffee is of excellent quality; the exports are steadily increasing. Experiments have also been made with tea, sugar-cane, cocoa, and tobacco. The natives have for a long time past cultivated tobacco in a casual way for their own use. Vegetables and fruit flourish. The onions of Timor are highly esteemed in Java and Celebes. A quantity of fruit is exported. The vine does well. So far as is known, cultivation is much less advanced in the west than in the east of the island.

Live-stock.—Timor has a breed of small horses, which are regularly exported. They are hardy, but until recently no attempt has been made to maintain or improve the quality of the breed. The natives turn them out to fend for themselves. Every horse is tattooed with the family mark of its owner, like the owner himself, and every Timorese family owns at least one horse. Buffaloes are numerous.

The following figures show the imports and exports of live stock to and from Timor and Dependencies, excluding Sumbawa:

Imports.

	1913.	*1914.*
Stallions	4	15
Mares	—	3
Bulls	19	54
Cows	151	636
Sheep	33	36
Goats	—	5
Pigs	—	1

Exports.

	1913.	*1914.*
Stallions	2,005	4,795
Mares	—	7
Buffaloes	2	3
Sheep	111	290
Goats	34	539
Pigs	—	804

Honey and wax are collected from the wild bees of the island.

(*b*) *Methods of Cultivation*

There are many sterile tracts in Timor, but there is also plenty of fertile soil, on which excellent crops can be raised. Particularly favourable reports have been given on a plain in Belu, south of Atapupu. The diluvial 'black soil' of Timor is celebrated for its fertility.

The natives are by no means capable of making the best of the opportunities that the character of the soil affords them. Their methods of cultivation are primitive, and in many areas they have not yet learnt to plough. Where they practise the wet system of rice cultivation, they simply turn buffaloes on to the land to trample and break up the earth, then plant rice haphazard, and finally flood the surface so recklessly that many of the young plants are carried away.

The most advanced methods of cultivation, however, are employed by experienced Dutch planters in their experiments with tea, sugar, &c., on the rich lands near Kupang. These planters also use proper methods of irrigation for the rice, which they cultivate on the wet system. Irrigation on scientific principles in Timor will always present serious difficulties, for from May to November, during the south-east monsoon, scarcely any rain falls. The earth becomes hard, and native cultivation is at a standstill. Drought affects the south of Dutch Timor more than the north and centre, where in some districts two crops can be obtained in a year. In the south it is often difficult to obtain even one crop in a year, but scientific irrigation might remedy this.

(c) *Forestry*

The sandalwood tree furnishes one of the chief exports of Timor, and this industry is now skilfully exploited. All felling of trees without a permit has been prohibited, but the control of the Government over the native tribes is very slight. The eucalyptus tree is common. The forests of Timor are scanty, owing to the long rainless season, but rosewood, teak, and bamboo are widely found.

(3) FISHERIES

The natives have no bent for seafaring, and in consequence the resources of the fisheries are little developed. Pearl-shells and trepang (*bêche-de-mer*) are exported extensively. Concessions have been granted to Europeans by the native rulers to fish for shells and trepang, in return for a share of the produce. The coral reefs which surround the island hamper net-fishing. Turtles are esteemed by the natives for their flesh. A Norwegian syndicate has announced its intention of fishing for whales in the seas around Timor.

(4) MINERALS

There is no doubt that Timor possesses mineral wealth, but the Government does not yet appear to have granted any concessions for mining. Alluvial gold, ores of copper, manganese, and chrome iron, and gypsum exist, and the island was formerly reputed to be very rich in copper. There is petroleum both on Timor and on Samau. Inferior asbestos has been found in western Timor. Marble is found in Dutch Timor, but it is said to be of soft quality.

There are mud geysers on Samau, though no signs of recent volcanic activity appear on Timor. Springs containing large quantities of alkali and iodine exist near Vassa.

(5) MANUFACTURES

A certain amount of plaiting and weaving is done by the women, who make *sarongs*, straw mats, and ropes. The natives manufacture silver bracelets which are artistically worked, earrings and rings, and also musical instruments, such as gongs, drums, and wooden tambourines, and an instrument called the *sasando*, provided with copper strings. Salt is obtained by evaporation on the shore of Kupang Bay. At Kupang there is an ice-factory, which in 1915 employed ten persons.

(C) COMMERCE

Precise information regarding the various branches of trade at the present time appears to be unobtainable. Both the foreign and domestic trade of Dutch Timor are almost entirely in the hands of the Chinese and Arabs, and are confined to Kupang and Atapupu.

The exports of Kupang include sandalwood, coffee, maize, rubber, native horses, fruit, oil-bearing seeds, bees-wax, copra, buffalo-hides, and pearl-shells, and also delicacies for the Chinese market, such as sharks' fins, trepang, and swallows' nests. (For the trade in live-stock see above, p. 25.)

(D) GENERAL REMARKS

The areas in Dutch Timor under direct Government control are a strip of land about 50 miles long and 6 to 9 miles broad around Kupang Bay, and the valley of Atapupu.

The future of the colony depends entirely upon the successful pacification of the native tribes or 'kingdoms'. Of these there are about forty, usually in a state of enmity with each other. There are a certain number of nominal Christians among the natives, but the bulk of both the Timorese, in the south-west of the island, and the Belonese, in the centre, are pagans, and most of them are dangerous and vindictive savages. The most troublesome people on the island are the black Christians, descendants of Portuguese half-breeds: they are proud, treacherous, and cruel. The mountainous interior is not likely to be law-abiding for many years to come. The natives hate strangers, and mostly live in small hill *kampongs* of a dozen huts.

The numerous Rajahs are constantly fighting amongst themselves, and, although most of them are pledged not to buy or sell slaves and to refrain from torturing and mutilating their subjects, such pledges are in most cases unfulfilled. These Rajahs are nearly all bloodthirsty tyrants. Even the tractable Rajah of Kupang claims to be closely related to the crocodiles in Kupang Bay, and till a few years ago virgins used to be flung to them, so that the family ties might be maintained.

Timor has suffered from the division of control between Dutch and Portuguese. The latter still retain more than half the island, including the Ocussi enclave, in the middle of the northern part of Dutch Timor, with about one-third of the northern coast-line of Dutch Timor (cf. above, p. 13).

Lying on the most direct route between Port Darwin and Batavia, the port of Kupang has a promise of prosperity, in spite of Timor's long annual drought. The island has the reputation of being unhealthy for Europeans, at any rate along the coasts, but Baun in Amarasi, at an altitude of about 4,000 ft., is regarded at Kupang as a satisfactory sanatorium. Dutch Timor, with an area nearly half that of the Netherlands, might support a far larger population. As has been pointed out already (see above, p. 25), the cultivation of coffee, cocoa, tobacco, sugar-cane, tea, and vines has been successful; fruit and vegetables flourish, and there is much fertile soil.

LESSER SUNDA ISLANDS

General Description

The Lesser Sunda Islands are geographically associated with Java, but from the economic point of view they belong to the Outer Possessions, and are thus classified in all Dutch Government statistics.

Flores, Sumbawa, and Sumba are the largest islands, but Bali and Lombok, though less than half their size, are economically more important.

None of these islands have railways, and most of them have not even good roads. The rivers are useless as means of communication, being torrents from December to March, after which they begin to dry up for the rest of the year. They might be extensively employed for irrigation, and are already used for that purpose in Bali and Lombok. The River Reo in Flores is navigable for some distance above its bar in all seasons.

The principal ports of all the islands are included in subsidized steamer services of the Koninklijke Paketvaart Maatschappij, which is under contract to send a steamer every four weeks to Ampenan, Sumbawa town, Waingapu, Endeh, Bima, Kupang, and other places.

All the principal islands possess horses, stunted and ugly, but hardy, and the Government is taking energetic measures to improve the breed. Wherever there are limestone cliffs, notably in Bali and Sumbawa, birds' nests are collected for export to China. The most easterly of the islands are, on the whole, the least fertile. Government opium is one of the principal imports; the demand for piece goods is increasing. There is a great deal of bartering in native trade, especially in the more easterly islands.

Probably the cultivation of the coco-nut palm, in order to obtain copra, will be the chief factor in the future economic prosperity of most of the Lesser Sunda Islands. The slave-trade, which the Dutch have now almost succeeded in suppressing, formerly depopulated and harassed the more easterly islands. The mineral wealth has been little explored. In 1909 and 1913 investigations were made by the Government in Bali and Lombok, but there is no information available as to the result.

The total European population, including half-breeds, does not exceed 400.

BALI

Bali, known as 'Little Java', is divided from Java by the Strait of Bali, which is only three miles wide at the north-western corner of Bali. A great part of the surface of the island is mountainous and there are several active volcanoes. The Balinese, obstinate in their adherence to Hinduism, are warlike, and cost the Dutch a bloody campaign of repression in 1908, and may at any time cause further trouble. But, with the Javanese, they are considered the most methodical husbandmen in the Dutch East Indies; they are also excellent craftsmen in metal and wood. Physically they are one of the finest races in the archipelago. Their only meat is pork, for their Hinduism makes them abstain from beef and buffalo-meat.

The climate is healthy in the interior, but the swampy south coast is fever-ridden, and the island has often been ravaged by cholera epidemics. There are teak trees (*jati*) in Bali, and the island is rich in coco-nut palms and lontar-palms, the copra and oil of which are largely exported. The larger forest trees, however, are scarcer than in Java. Rice is grown in large quantities, and the native farmers generally grow cotton in rotation with it. Several large lakes are utilized for the irrigation of crops. There was a cocoa estate at Negara in 1915, of which 10 *bouws* (17½ acres) were planted with cocoa alone. The other chief products cultivated are coco-nuts, coffee, and tobacco. There is also an abundance of fruit-trees. Cattle and pigs are bred and horses are exported.

There are good roads across Bali, connecting Badong, Kusambe, Negara, and Karangassem (Karang Asem) with the capital at Singa Raja. Pabean Buleleng, two miles from Singa Raja, is a busy port, in direct communication by cable with Landangan in Java and with

Macassar in Celebes. On Bali Island there were 45 miles of telegraph wires at the end of 1914.

In 1915 there were eighteen factories in the Residency of Bali and Lombok employing five or more persons. They were classified as follows:

	Factories.	*Employees.*
Brick and tile works . . .	4	31
Vegetable oil factory . . .	1	16
Rice mills	5	74
Soap-works	1	15
Smithies	4	28
Furniture factories . . .	3	23

Full particulars of exports and imports are not available, the official returns referring in some cases to a single port, and in others to the Residency of Bali and Lombok, which includes both islands. Bali takes first place among the Outer Possessions in the export of rice and ground-nuts. In 1913 its export of rice amounted to 11,500 metric tons, value fls. 1,680,000, while 2,400 metric tons were imported, value fls. 248,000, so that there was a balance to the good of fls. 1,432,000. The export of ground-nuts from Pabean Buleleng in 1914 was 1,566 tons. The export of coffee from the whole Residency was 1,280 tons in 1915. Formerly all coffee from Bali and Lombok used to be sent to Singapore to be prepared for the European market, but in 1915 marketing at Surabaya began. The export of copra from Pabean Buleleng in 1914 was 5,480 tons, and in 1915 2,473 tons. The total export of tobacco from Bali and Lombok in 1915 was 195 tons, of which 154 tons went to Holland and the rest to Singapore. Hides, fibres, oil-seeds, kapok, and some raw cotton are also exported.

LOMBOK

This island, like Bali, is mountainous, and Renjani, or the Peak of Lombok, 12,290 ft. high, is the loftiest summit in the Dutch East Indies. The Sassaks, who inhabit Lombok and the western part of Sumbawa, are nominally Mohammedans; they are less enterprising and energetic than the Balinese, who dominated them during a long period (cf. above, p. 16). A Balinese Rajah of western Lombok rules over Karangassem in Bali. The Dutch supremacy is, however, firmly established now in both Bali and Lombok.

The chief crops grown on Lombok are rice, coffee, and maize. Some cotton is grown; official experiments with foreign cottons have not had much success, but are being continued. The ginning of the raw product has not yet been introduced in Bali and Lombok.

The capital of the island is Mataram, but it preserves only a remnant of its former splendour. Ampenan, on the deep Lombok Strait, opposite Bali, is the chief port. It is connected with Mataram, a few miles away, and with the east coast, by a good road. There were 45½ miles of telegraph wires in Lombok at the end of 1914.

The exports include copra, rice, tobacco, cotton, ground-nuts, hides, and coffee. The export of rice from Ampenan amounted in 1915 to only 154 tons, but in 1912 it had been as high as 1,788 tons. In 1915 17 tons of hides were exported. No separate figures for the export of coffee and tobacco are available besides those for the whole Residency already given under Bali.

The imports into Ampenan in 1915 included textiles, value fls. 101,228, earthenware and china, value fls. 6,514, iron and steel, value fls. 3,943, and haberdashery, value fls. 1,896. Wheat-meal imported amounted to 5,014 kilograms, and matches to 16,900 gross boxes.

SUMBAWA

Much of the soil of Sumbawa is very fertile. Rice, teak, sapan-wood, tobacco, and bees-wax are exported. In the west of the island cinchona is grown. There are large exports of live stock: in 1913 there were exported 3,818 horses and 4,660 buffaloes. A fair number of goats and some sheep were also exported. Sulphur, arsenic, and petroleum are found in the island.

The Bay of Bima in western Sumbawa is one of the finest natural harbours in the whole of the Dutch East Indies. It penetrates inland in an almost southerly direction for 16 miles, with a minimum width of a little over a quarter of a mile. The port of Bima (population probably about 2,000) is the largest town. It is growing fast, and is likely in a few years to become very important. Sumbawa town (called Sumbawa-besar), in western Sumbawa, is increasing its trade; it is the seat of an Assistant Resident. Maumere is also a growing port. All three places have a steady trade with Java and Celebes.

FLORES

The chief occupation of the people of Flores is agriculture, and the system of communal land-holding by the tribe is fairly widespread. If left to themselves the natives would grow little but sago and maize, the latter being their staple food. But sugar and cocoa are also cultivated, and a little rice is grown near the coasts. Experiments in cotton-growing have been made; in 1913 only about 25 tons were exported, but there might be a future for cotton cultivation in the island, especially if cotton of a longer staple were grown. The cultivation of the indigenous type (*kapas*) here and in other islands tends to diminish as European cotton yarns become more easily obtainable. The exports include sandalwood, sapan-wood, cinnamon, and bees-wax. Natives report the existence of large deposits of tin in the interior. Iron, sulphur, saltpetre, and pumice-stone are also found.

In 1913 a military officer was appointed to make plans for roads in Flores, to connect Manggarai on the west with Maumere, Endeh, and Larantuka. The last-named town, in the east of the island, has a population of about 5,000; it has two anchorages with a depth of some 20 fathoms. The vessels of the Koninklijke Paketvaart Maatschappij call there and at Endeh. Larantuka has a considerable trade with Celebes, to which it sends fish, tortoise-shell, and cinnamon in return for manufactured goods.

SUMBA

The natives of Sumba or Sandalwood Island are idle and pleasure-loving. Maize is the staple food, and rice, tobacco, indigo, and cotton are also grown; sago is exported. The sandalwood trees, for which the island was once famous, have now disappeared from the coasts owing to reckless felling, but there are still a good many in the interior. The horses of Sumba are noted as the largest and strongest in the Dutch East Indies. The island was formerly a centre of slave-trading.

The chief town is Waingapu; it has a population of over a thousand.

ROTTI

This island, which lies close to Timor, is fertile, and watered by many streams; its highest point is about 800 ft. The natives are fairly industrious, when not too much addicted to *sagoweer* (*sagueir*), and cultivate rice, barley, maize, and some sugar. *Lontar* sugar is their main food. Some of them go to Timor to work.

Cyrus Bay, in the south-east of the island, is a sheltered and fairly spacious anchorage. Namudale (or Baä) has a population of about a thousand, and exports fish, wood, and wax.

SAVU

This island forms with Rotti a division of the Residency of Timor. Streams are lacking, and drinking-water is obtained from wells. Lontar sugar is the main food of the people. There are good horses in the island. The capital is Seba. The scarcity of means of subsistence causes considerable emigration to Rotti.

SOLOR, ADUNARA, LOMBLEN, PANTAR, AND ALOR ISLANDS

These islands are the least civilized of the Lesser Sundas. Pearl-fishing is an industry, and shells are a medium of exchange, coined money being little used. The natives do not share the repugnance felt by those of Sumba, Savu, and Rotti to seafaring pursuits. Adunara is the most fertile of these islands.

AUTHORITIES

Historical

A full list of Historical Authorities is given in *Java*, No. 82 of this series.

Economic

Encyclopaedie van Nederlandsch-Indië. [1st ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden [1895–1905.]

—— [2nd ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Mededeelingen van het Bureau voor de Bestuurszaken der Buitenbezittingen. The Hague, 1904–14.

Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.

Verslag omtrent Handel, Nijverheid en Landbouw van Nederlandsch-Indië gedurende 1914. Batavia, 1915.

CABATON, A. *Les Indes néerlandaises.* Paris, 1910. (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911.)

WRIGHT, A. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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DUTCH
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AND THE
MOLUCCA ISLANDS

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I. GEOGRAPHY PHYSICAL AND POLITICAL

DUTCH NEW GUINEA

(1) Position and Frontiers

The island of New Guinea has an area of 312,329 square miles, its greatest length being 1,490 miles and its greatest breadth 410 miles, and the Dutch possessions occupy an area of 151,789 square miles, or nearly one half of the island. The area of the islands adjacent to Dutch New Guinea is 6,760 square miles. The only land boundary is on the east side, where the Dutch territory is conterminous with the British and German possessions. Here the boundary starts in the south from the middle of the mouth of the Bensbach River, in about 141° 1′ 48″ east longitude, and runs due north as far as the Fly River, the course of which it ascends till it cuts for the second time the meridian 141° east: this meridian then forms the boundary as far as the north coast. Dutch New Guinea lies between 0° 20′ and 9° 10′ south latitude, and extends to about longitude 130° 50′ east.

Until the beginning of this century the interior of these possessions had hardly been explored at all, only the north-west portion being known; even now only the lower courses of most of the rivers are known.

Dutch New Guinea is divided into North, West, and South (Dutch) New Guinea.

(2) Surface, Coasts, Islands, and Rivers

Surface

The shape of the island is irregular, the compact mass of the centre being extended both to the north-west and south-east by long promontories. The north-west peninsula, made by the deep inlet of Geelvink Bay, is itself divided by McCluer Gulf, which is separated from Geelvink Bay by an isthmus less than 10 miles wide at its narrowest point.

From Geelvink Bay the main chain of mountains, under various names, trends north-west and south-east across the island. Its greatest heights exceed 15,000 ft., and rise above the level of perpetual snow, which seems in these parts to be about 14,500 ft. The chief heights are Carstensz Peak, Mount Idenburg, and Mount Leonard Darwin, whose southern face has the sheerest precipice known in the world, with an almost perpendicular fall of 10,000 ft. Between the main chain and the sea are many lower ranges, which are succeeded by savannas of grassland, and then by about 50 miles of forest-covered swamp.

The country to the north of the great chain has been even less explored than that to the south of it, and there are parallel ranges of hills between it and the Pacific Ocean, such as the Van Rees Mountains (about 3,300 ft.), the Gautier Mountains (7,875 ft.), and Mount Cyclops (6,580 ft.).

Most of Dutch New Guinea is covered by dense forest up to about 8,000 ft. The lowland is alluvial; great alluvial tracts spread not only in the south of the island, but along the course of the Momberamo and both north and south of the Van Rees Mountains. The soil is of extraordinary fertility. Much of the lowland is swamp, covered with mangroves, full of slime and stagnant water, and very unhealthy.

The chief lakes as yet discovered are near the north coast. Lake Rombebai, east of the Momberamo River, is 10 miles long and 5 miles wide, and is surrounded by swamp. Lake Sentani, near Humboldt Bay, 10 miles long and 4 miles wide, has many villages about it.

Coasts

The coasts of Dutch New Guinea, which are as yet very imperfectly charted, are much indented, especially in the western part. There are a large number of natural harbours; and, even where there is a deficiency of them, the presence of islands off the coast affords good anchorage. Unfortunately, several of the places that have the best natural facilities, e.g., Manokwari and Dubus, have proved very unhealthy, so that little can be done to develop them.

The nature of the coast varies considerably. The north coast, starting from Cape Sorong, is generally high as far as the Cape of Good Hope. After that the Arfak Mountains approach the sea, but to the east of Little Geelvink Bay there is a strip of lowland by the coast. The great indentation made by Geelvink Bay is about 230 miles wide and 170 long, and has a chain of islands across its entrance. The western shore of the bay is high, steep, and mountainous; the eastern is low, flat, and alluvial; and these last characteristics extend along the coast as far as Cape d'Urville. East of this, as far as Sarmi Point, the coast continues low; but then, as far as Humboldt Bay, it is, as a rule, high, rocky, and rugged, and much broken by bays and creeks, though some parts are low and swampy, with thick forests of mangroves.

On the west and south-west coast of the island, the shores from Cape Sele to McCluer Gulf are flat and densely wooded. The rugged coast between Cape Kokrauf and Cape Sapei is fringed with a coral reef, only broken before the mouths of rivers. From Nautilus Strait to Kamrau Bay the coast is flat and covered with vegetation, but thence to the eastern side of Etna Bay the Charles Louis Mountains approach the coast. From Mount Buru (4,564 ft.), the mountains turn inland; and then begins the great alluvial tract formed by the lower courses of the rivers that rise in the Central Range.

Islands

The shores of New Guinea are fringed by many islands. At the north-western extremity the most important are Waigiu, Batanta, Salawati (Salwatti), and Misol. Waigiu is nearly 80 miles long, with a greatest width of 28 miles. It is very rugged and hilly, and is covered with dense forest. Offak, on its northern coast, is a good harbour. Batanta, 40 miles long, with a width of from 4 to 8 miles, is densely wooded and mountainous, and almost uninhabited. Salawati, south of Batanta, is about 30 miles across. The east of the island is low and swampy, with extensive forests of sago and coconut palms. Misol is 50 miles long and 23 broad. The coast is generally rocky, but on the south-east is swampy and covered with mangroves.

North of Waigiu are the Aiu (or Yowl) Islands, an archipelago of about twenty small islands, wooded with coconut trees. Beyond the Equator to the north-east are the Mapia (St. David or Freewill) Islands, assigned by a recent award to Holland, as against Spain. Pegun, the chief island, is the residence of a " king."

The entrance to Great Geelvink Bay is blocked by several islands. Of these the northernmost are the Willem Schouten (or Misore) group, of which Suk or Supiori is 17 miles long; Biak or Wiak, about 45 miles long and 23 wide. Within the bay the most important island is Jobi or Japen, 100 miles long and from 10 to 15 wide. The southern coast, indented by deep creeks and fronted by a number of wooded islets and reefs, affords numerous anchorages. On it is the chief settlement, Ansus.

On the west coast may be mentioned Karas Kuni (or Gudin), and Adi, which is an island of coral formation, 32 miles long, containing several villages.

Near the eastern end of the Dutch possessions is Prince Frederick Henry Island, with an area of about 2,820 square miles. It is flat, marshy, and covered with dense forest, and is of little or no value.

Rivers

Dutch New Guinea has many rivers of considerable size, but they have been only partially explored.

On the north coast most of the rivers are of no great length, but the Momberamo (Mamberamo, Ambernoh or Rochussen) is of considerable importance. Its basin has been estimated at about 23,300 square miles, and it drains the whole of the north side of New Guinea from Mount Leonard Darwin in the west to Juliana Peak in the east. Its chief confluents are the Rouffaer and the Idenburg.

Along the western coast are several rivers that can be navigated for a short distance from their mouths, but none of these is fordable till the mountains are reached. Their upper reaches have many rapids and waterfalls which might be used for water-power, and their courses constantly change owing to dams of timber falling across the rivers.

The rivers south of the Eilanden river, opposite the Aru Islands, are less important, but the Odammon has many big tributaries, one of which, the Mapi, has been ascended for some distance. The Digul is the most considerable river on the south coast of Dutch New Guinea, and its basin occupies an area of about 7,700 square miles. The Fly, the longest river in New Guinea, forms, for a small part of its course, the boundary of Dutch and British territory. The volume of water in this river is immense.

(3) CLIMATE

The climate of New Guinea is very hot, damp, and unhealthy, especially during the wet season and in the low-lying parts. Since the island lies just south of the Equator, the north coast comes under the equatorial rain-belt. Although certain months (July, August, and September) have less rain than others, there is no definite dry season, and rain is excessive and constant throughout the year. The southern part of the island is much drier, at any rate in the eastern extremity, which has a definite dry and wet season.

In the western part of the island the south-east monsoon blows from April to October; the north-west monsoon from October to April. In the early part of the year storms and squalls are experienced, and the best season for navigation on the north coast is said to be July and August. On the south-west coast storms are especially dangerous from January to March and from June to October.

Near Manokwari, according to observations made from 1879 to 1901, the total annual rainfall averaged 89·71 in. (227·9 cm.); the average monthly rainfall was 7·44 in. (18·9 cm.). The wettest months were from December to April, the driest September and October. More recent figures are available from Hollandia Bivouac, on Humboldt Bay. There the total rainfall from February 1909 to January 1910 was 112·83 in. (286·6 cm.). The wettest months were December and April, the driest July and October. The average maximum temperature for this period was 86° F. (30° C.), the average minimum 75° F. (24° C.), the highest average for any month being in October, 88° F. (31° C.), the lowest in May, 73° F. (23° C.). South of the Central Range the temperature varies from 70° F. (21° C.) to 91° F. (33° C.).

(4) Sanitary Conditions

The country is not at all suited for the residence of Europeans. The coast is one of the most unhealthy in the world, and the natives suffer a great deal from various diseases, especially skin diseases. The only place along the coast in Dutch New Guinea which is described as healthy is Fakfak; and that is due to the fact that the sea-breezes sweep away the insect pests that make life almost unbearable elsewhere in the island. Etna Bay and Dorei Harbour, which would, for geographical reasons, be the places most capable of development, have both proved unhealthy; at the latter place ague, fever, and dysentery are said to be prevalent. In a country so full of mosquito-ridden swamps malaria is naturally common, and is frequently found up to the level of 2,000 ft. Other diseases that appear among the population are beri-beri, syphilis, elephantiasis, leprosy, and pneumonia.

(5) RACE AND LANGUAGE

Race

So much of Dutch New Guinea remains unexplored that it is impossible to enumerate or classify the many tribes that inhabit it. The inhabitants are all generally described as Papuans, from a Malay word which means "woolly-haired." The name covers people of very different characteristics, each with its own tribal name, differing in speech and customs, and often at war with one another. The inhabitants of the coast, however, sometimes reserve the name for themselves, and call the tribes of the interior Alfurs. There are few traces of anterior stocks, although the Karons of the north-west may be Negrito. The Tapiro pygmies found in the Kapare Valley have an average height of only 4 ft. 8¾ in.

It would be hazardous to assert that the Papuans of the coast belong to a different race from those of the interior, but they certainly show more of the effects of external influence. Naturally where trade is most vigorous the population is most mixed.

The Papuan has gained little by contact with more civilized peoples. In some parts of the country the natives are still cannibals, and head-hunting is rife; they have a propensity for stealing and for murder, if it can be done by stealth. Some of them are very friendly, but others have shown themselves treacherous to strangers.

There are no Dutch settlements of any size in the island.

Language

Languages and dialects are innumerable, and differ widely. On the coasts of North-West New Guinea and on some of the adjacent islands the speech of the Nufur Papuans, or a patois of it, is used as a *lingua franca*, and takes the place of Malay.

(6) Population

Distribution

So much of the island is unexplored that figures for the population of Dutch New Guinea must be entirely conjectural. The inhabitants have been thought to number between 200,000 and 260,000, and to be rather less than one-third of the population of the whole island. This amounts to less than two per square mile. In the explored part of North New Guinea, where a rough census has been taken, the people of 111 villages numbered about 9,200. In the region of the North-West River it was calculated that there was a population of 4,800 in an area of 4,600 square miles.

Towns and Villages

Strictly speaking, there are no towns in the Dutch possessions; but Fakfak, Manokwari, and Merauke are the abodes of handfuls of Dutch, and the seats of administration of the three residencies into which Dutch New Guinea is divided. The population of Fakfak in 1905 was 693, including 16 Europeans, 48 Chinese, and 26 Arabs. That of Manokwari was only 119, including 8 Europeans and 7 Chinese. (For further details of settlements see below, p. 24.)

MOLUCCA ISLANDS

(1) Position

The Moluccas (Spice Islands) was a name given originally to the volcanic islands which fringe the western shore of Halmaheira; it is now generally applied to the two groups of important islands to the north-west of the Dutch possessions in New Guinea: Halmaheira, Morotai, Bachian, and Obi to the north; Ceram, Buru, Amboina, and the Bandas to the south. With these are included here the other islands of the Amboina residency, the Kei Islands, the Aru Islands, the Timor Laut Islands, and the South-Western Islands. The area thus included extends, roughly speaking, east of Celebes, to 135° east longitude, and between 5° north latitude and 8° south latitude, and comprises a number of considerable archipelagos of very different features and characteristics. The islands are divided politically into the residencies of Ternate and Amboina.[1]

(2) Climate

The number of places in the Moluccas where scientific observations are made is limited, and the individual characteristics of the different islands are very marked. Generally it may be said that north of the Equator north-east winds prevail from December to March with fine weather, the winds blowing strong and steadily; south-west winds prevail from May to September with a rainy season, the winds being variable in force and direction, and bringing bad weather; October and November are unsettled months. South of the Equator west and north-west winds shifting to north-east prevail from November to March; the coasts that look north have land- and sea-breezes with unsettled weather and rain; south-east and east winds, which are generally fresh and steady, prevail from May to September, with fine weather on the coasts that look north and bad weather on the coasts that are exposed to the south. Amboina has an average annual temperature of 79° F. (26° C.); from November to March the average temperature is 81° F. (27° C.); in July and August 77° F. (25° C.), and it then rarely sinks below 72° F. (22° C.). In Banda the mean temperature is 81° F. (27° C.); in August it sometimes falls to 68° F. (20° C.) at night. The rainfall varies greatly in different parts of the archipelago, as may be seen from the following table:—

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[1] The principal islands are described individually below p. 38 *et seq.*

—	Annual rainfall.		Monthly Maximum.			Monthly Minimum.		
	in.	cm.		in.	cm.		in.	cm.
Amboina.. ..	142·5	362	June	24·9	63	Nov.	4·7	12
Ternate[1].. ..	84·1	213	Jan. and Apr.	8·9	23	Sept.	4·0	10
Kayeli (Buru) ..	73	185	Jan.	9·4	24	Oct.	2·0	5
Wahai (Ceram) ..	85·9	218	Feb.	17·2	43	Aug.	3·1	8
Amahai (Ceram) ..	110·2	278	July	18·5	47	Feb.	4·1	10
Saparua (Uliassers)	137·1	348	June	25·4	64	Nov.	3·5	9
Banda	111	283	May	16·9	43	Aug.	4·3	11
Tual (Kei Islands)..	93	237	Jan.	13·2	33	Aug.	1·5	4

In Ternate the climate is good, the air bright and pure, and the temperature, owing to the influence of sea and wind, is seldom above 86° F. (30° C.). The Kei Islands also have an excellent climate.

Considerable droughts occur in the Aru Islands, Kissa, and Letti. The date of the commencement of the monsoons seems to differ considerably even in islands that are not far from one another.

(3) Sanitary Conditions

The general account given of the islands is that they are healthy, but some exceptions have to be made. Buru is certainly unhealthy, especially at Kayeli and along the swampy north coast, and the inhabitants suffer from malarial and rheumatic fevers. Bachian is also unhealthy. The Aru Islands are unhealthy during the months of the south-east monsoon, when beri-beri and fevers are not uncommon. There have been severe epidemics of small-pox here, in the Kei Islands, and also in Ceram. Timor Laut is very unhealthy; fevers are rife, partly as the result of bad water; and other complaints are rheumatism, scrofula, and the skin diseases common among Papuans. In Kissa fevers are prevalent from September to March. Head diseases are rife in the Babar Islands, and beri-beri is prevalent in Morotai.

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[1] Owing to the position of the land the monsoons are here deflected to north and south.

Amboina, however, is particularly healthy, and despite the usually high temperature is not as trying to Europeans as might be expected.

(4) Race and Language

In the larger islands we may usually make a division between the inhabitants of the interior, who are called by the general name of Alfurs, the name applied to them by the Mohammedans as pagans and pig-eaters, and the races of the coast, who are usually extraordinarily mixed, and who, as a rule, are Christian or Mohammedan. A typical example of this distinction of race would be found in the island of Buru. Here the Alfurs keep to the interior—a tradition says that they are ill if they hear the sound of the sea-surf—and on the coast is a mixed race drawn from the inhabitants of Buton, the Sula Islands, Gilolo, Amboina, and Buru itself, with a mixture of Chinese and Arabs. About Masarete the people are mostly Christian; about Kayeli mostly Mohammedan. The indigenous population of the Moluccas is described as something between the Malayo-Polynesian and the Papuan, the latter type being more characteristic of the south and east.

Certain islands, like Amboina and Ternate, have had a longer and more important history than others, and the inhabitants have reached a more recognized status if not a higher degree of civilization. The people of Ternate have a language of their own, written in Arabic characters, which serves as a *lingua franca* even outside their own island. In Amboina the inhabitants are mostly Christian, descendants in many cases of Portuguese and natives; and have adopted something of European ideas and costume. The Portuguese have left a lasting impression on language and customs in many parts of the archipelago.

There has been much migration from island to island, which has contributed very largely to the complication of the ethnological problems of these islands.

One group of inhabitants should be specially mentioned, i.e., the 300 "Dutch heathen," as they are called, who live on Kissa. They are the descendants of eight Dutch soldiers, who were sent there in 1665, accompanied by their wives, to form a garrison, and were afterwards forgotten. These people are differentiated from the rest of the inhabitants by their fair skins, blue eyes, and European names.

There are Chinese traders in many places, and in some islands, e.g., the Bandas, Arabs are predominant.

(5) POPULATION

Distribution

The total figure given for Ternate residency in 1912 was 160,135, including 158,465 natives, 477 Europeans, 801 Chinese, 376 Arabs, 16 foreign Orientals; in Amboina residency the total was 325,934, including 319,754 natives, 3,181 Europeans, 1,656 Chinese, 1,343 Arabs.

The following table gives a rough idea of the population of the principal islands, but the figures are in many cases quite conjectural, and some are by no means recent:—

Halmaheira	30,000	Amboina	40,000
Morotai	4,200	Uliassers	20,000
Ternate	9,060	Ceram Laut	6,000
Tidore	9,624	Goram	6,000
Makyan	8,000	Kei Islands	23,000 to 26,000
Bachian	6,166	Aru Islands	10,000 to 13,000
Obi	1,044	Timor Laut (1889)	19,000
Buru	13,000 to 20,000	South-Western Islands	60,000
Ceram	60,000 to 63,000	Babar Islands	10,000
Banda Islands	6,000		

The birth-rate is low, and this is chiefly due to the early age of union between the sexes and the frequent absence of the men from their homes when engaged in collecting forest produce. Head-hunting has also exercised its usual disastrous effect on numbers. The regulations of the Dutch Government, however, have greatly ameliorated conditions.

Towns and Villages

There are but few places in all this wide area that can be dignified by the name of town, and most of the settlements are merely native villages. The chief exceptions are:—

Amboina (pop. 8,328); Banda Neira (pop. 4,130) Ternate (pop. 3,616); Saparua (pop. 2,354), the principal town of the Uliassers; Labuha (pop. 2,666) in the island of Bachian; Wahai (pop. 2,850), the chief town in Ceram; Tual (pop. 802), in the Kei Islands.

II. POLITICAL HISTORY

CHRONOLOGICAL SUMMARY.

1600	The Dutch capture Amboina.
1602	Trade with the Banda Islands.
1609	The Portuguese and Spaniards ousted, except from Tidore and Ternate.
1616	The Dutch land on New Guinea.
1619	Treaty with England to share the Moluccas trade.
1621	Coen's expedition to the Banda Islands.
1623	Legal murder of Englishmen at Amboina.
1650	Destruction of Molucca plantations by the Dutch.
1660	All the Moluccas in Dutch hands.
1678	The Dutch contract with the Rajah of Onin (New Guinea).
1796-1802	Amboina under English rule.
1810-1817	Resumption of English rule over Amboina.
1824	Van der Capellen introduces milder government in the Moluccas.
1828	The Dutch take possession of all New Guinea west of 141° E.
1895	Treaty with Great Britain to fix the boundary of Dutch New Guinea.

DUTCH NEW GUINEA

THE first landing of the Dutch on New Guinea, made by Le Maire and Schouten in 1616, was no more than accidental; and, although their trading relations with the Molucca Islands commenced very early in the seventeenth century, the Dutch did nothing further in New Guinea until 1678, when a contract was made with the Rajah of Onin. Even so, it was not till 150 years later that the Dutch took formal possession of that portion of the island west of 141° E. longitude, and colonization began.

Rulers of various islands in the Moluccas had formerly exercised jurisdiction over the western portion of New Guinea; and, accordingly, when the island came under Dutch governmental control, portions of it became sub-divisions of residencies already established in the Moluccas

The northern half of the boundary line marking the eastern frontier of Dutch New Guinea was fixed as between Great Britain and Germany, April 25-29, 1885, but was never the subject of a treaty between the Netherlands and Germany. The southern half of the boundary was determined by a treaty between Great Britain and the Netherlands, dated May 16, 1895.

MOLUCCA ISLANDS

When, early in the sixteenth century, the Portuguese took possession of the Moluccas for the sake of the spices, the most powerful native rulers were those of Ternate, Tidore, Bachian, and Gilolo. In 1600 the Dutch captured Amboina and the monopoly in cloves; the acquisition of the Banda Islands in 1602 gave them the trade in nutmegs and mace. By 1609 they had ousted the Portuguese and Spaniards from all the spice islands except Tidore and Ternate. A commercial treaty made with England in 1619 for sharing the trade was not long respected.

The vigorous rule of Coen and De Carpentier combated English enterprise, and after the "massacre of Amboina" in 1623, when ten Englishmen were put to death, after torture, for an alleged plot to seize the fort, the English were kept away entirely for a time. About the middle of the seventeenth century Holland secured the right (deemed necessary for the maintenance of the monopoly in spices) to destroy all the clove plantations in Ternate, Bachian, and other islands. This measure gave rise to acute distress among the natives; and when, in 1660, the Dutch East India Company concluded permanent treaties with the rulers of Ternate, Tidore, and Bachian, the Spaniards quitted Ternate and Tidore, where they had till then kept up establishments.

During the Napoleonic period there were two English occupations of Amboina—one from 1796 to 1802, another from 1810 to 1817. It was during these that a milder rule with regard to the spice trade was introduced; the return to harsh measures on the resumption of control by the Dutch led to much unrest, and a rising at Saparua had to be put down by punitive expeditions.

When, however, Van der Capellen, Governor-General of the Dutch East Indies, visited the Moluccas in 1824, the islanders were relieved from the abuses under which they had so long suffered. He placed a higher purchase-price upon the spices and abolished compulsory destruction, leaving cultivation optional.

III. SOCIAL AND POLITICAL CONDITIONS

DUTCH NEW GUINEA

The bulk of Dutch New Guinea is entirely unexplored. The natives are divided into numerous tribes constantly warring against each other, and Dutch authority has only been established on portions of the coast. In some districts, notably in Humboldt Bay, which is on the north coast near the boundary between Dutch and German territory, and to the north of McCluer Gulf, *kampongs* of twenty houses are found, each house containing at least five families, which would give a total population for such a *kampong* of not less than 1,000. In the interior the villages are, as a rule, much smaller. Concerning the pygmies in the highlands, there is very little information available.

The northern portion of Dutch New Guinea is included for administrative purposes in the Residency of Ternate. The southern portion of the Dutch territory is included in the Residency of Amboina. Christian missionaries, both Catholic and Protestant, have helped to introduce civilization in Humboldt Bay and in the neighbourhood of the principal settlements. Traders from Ceram have introduced Mohammedanism, accompanied by a veneer of civilization, in the territory of Onin south of McCluer Gulf. With the adoption of Christianity or Mohammedanism the natives in limited areas have assumed to some extent the habit of wearing clothes.

MOLUCCA ISLANDS

The Northern Moluccas, comprised in the Residency of Ternate, which also includes a small portion of Celebes and the northern portion of Dutch New Guinea, are of less importance in modern times than Amboina, which also includes Southern and Western New Guinea. It has even been proposed to remove the seat of the Residency of Ternate from that island to a centre with greater commercial prospects. The prosperity of the Moluccas will depend very largely upon the copra trade. The wealth brought to the spice islands in the past is still evident in the handsome houses occupied even by Chinese and natives in Ternate, Amboina, and Banda, and in the garments and trinkets of gold and silver worn by the more prosperous classes.

The ancient Sultanates of Ternate and Tidore left permanent divisions among the natives, who are, in consequence, divided into *pata-lima* and *pata-siwa* in some of the islands, as in Ceram and the Aru Islands, or *uri-lima* and *uri-siwa* in the Banda Islands. There are further sub-divisions based on social status and marked by special forms of tattooing or of costume.

It has been contended that in the tropics Europeans degenerate in the course of three or four generations. The history of the Dutch village on Kissa Island (see above, p. 12) is at variance with this theory. The island of Kissa suffers severely from drought, and it is necessary to work hard to maintain existence. The original sixteen settlers built a church, and handed down their Protestantism to their descendants, and the vitality and vigour of this little colony is ascribed mainly to the conditions of life on this small island, which provided almost the same hardening environment as that of their ancestors in North-West Europe.

Life is so easy on most of the islands of the Moluccas that there is little incentive to work hard, and tribes decay from sheer lack of energy. The suppression of piracy by the Dutch, and the consequent assurance of safety to the natives, appears to have increased the physical indolence naturally induced by the climate.

IV. ECONOMIC CONDITIONS

DUTCH NEW GUINEA

(A) MEANS OF COMMUNICATION

THE natural features of Dutch New Guinea make inter-communication very difficult. The solid barrier of the central range divides the north from the south, while communication between east and west is largely hindered by the rapid rivers and the deep ravines through which they flow. The dense jungle, the savagery and untrustworthiness of many of the natives, and the intense humidity all add to the difficulties of travelling.

(1) *Roads and Rivers*

Except in the vicinity of the principal settlements, there are no gravelled roads in Dutch New Guinea, but only native tracks. Where a village or settlement has become important enough to make wheeled traffic necessary, the local paths are improved and gravelled for distances of a few kilometres. This has been the case, for example, at Manokwari and Merauke, where small sums have been expended on road-making and upkeep in recent years.

With the following exceptions, the rivers are only navigable, even close to their mouths, by native boats. The *Fly River*, the longest in New Guinea, is navigable by fairly large vessels for over 500 miles, and for another 100 miles by smaller craft; but its mouth is in British territory, and it only touches Dutch territory for a portion of its course, some distance from the sea. On the north coast the *Momberamo* is the largest river in Dutch New Guinea; it is navigable for about 70 miles from its mouth. Of the other rivers, the *Sebjar* and the *Ketero*, flowing into McCluer Gulf, have been navigated respectively for 34 and 23 miles by vessels of 8 ft. draught. The *Utakwa* has been ascended by a sea-going ship for 17 miles, beyond that for two days by a launch and for another day by a canoe. The *North-West River* can be navigated at high-water for about 28 miles or 8 hours[1] by a vessel of 12 ft. draught. The *Utumbuwe* has been ascended by a similar vessel for 55 miles and by a launch for 28 more. The *Digul*, the most considerable river on the south coast, and 6 miles wide at its mouth, has been navigated for nearly 400 miles by a steamer of 6 ft. draught. The *Kasteel*, the *Lorentz*, and the *Odammon* have also been ascended for some distance from their mouths. Many of the rivers along the west coast are linked by connecting passages (*antassans*), by means of which it has been possible for a vessel of 6 ft. draught and about 80 ft. long to pass all the way from the River Eilanden to the Utakwa.

(2) *Ports and Anchorages*

Among the harbours on the north coast is *Little Geelvink Bay*, which affords shelter from easterly winds in a depth of 20 fathoms. Further east is *Dorei Harbour*, about a mile long and half a mile broad, with a depth of 20 fathoms. Further up in Geelvink Bay is *Wandammon Bay*, extending southwards for about twenty-eight miles, with alluvial flats round its southern end. East of Geelvink Bay are *Walckenaer Bay*, *Tanah Mera Bay*, and *Humboldt Bay*. The first is too open to make a good harbour, but the abundance of coconut trees in the neighbourhood has created a trade in copra; the second has a depth of 35 to 40 fathoms in the centre of the bay, but reefs and rocks make it dangerous; the third is exposed to the north-east, but furnishes good protection on its north-east side, where there are two deep inlets.

On the west and south-west coast the harbours are more numerous and penetrate further into the land.

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[1] The Dutch *uur* (hour) is a measure of 5,653 metres or just over 3½ statute miles.

McCluer Gulf, which extends to within ten miles of the north coast, is over 100 miles long and more than 20 miles wide at its mouth, narrowing to 10 miles at the entrance to its inner part, called Bintuni Gulf. *Fakfak* is not situated on a harbour, but an anchorage is afforded by the screen created for it by Panjong Island, and the sea is deep up to the coast. *Kaimana*, the commercial centre of the Etna Bay region, is a safe harbour, being protected by a strip of land and a small island in front; ships can anchor close to the shore. *Merauke*, the principal port on the south coast, is situated about four miles up the Merauke River, the mouth of which has a depth of about two fathoms, and affords the only good anchorage along the shallow coast. Vessels anchor opposite a primitive landing pier for native boats (see below, p. 25).

All the principal ports in Dutch New Guinea are visited by one or other of the three contract services of the Koninklijke Paketvaart Maatschappij from Amboina (see below, p. 30).

(B) AGRICULTURE AND NATURAL RESOURCES

(1) *Products of Commercial Value*

The vegetation of New Guinea, though Malayan, has a decided Australian element in it, especially in the south, where there are many varieties of eucalyptus, acacia, &c. Dutch New Guinea is almost entirely covered with dense forest. Tall forest trees are found even at altitudes of 8,000 ft., and at altitudes of 10,500 ft. has been found a pine-like tree called *Podocarpus papuanus*. There are over 120 useful varieties of timber, including the heavy close-grained ulabo, which resists the attacks of white ants. Sandalwood trees are found in small numbers in the drier ground, but the supply is diminishing. The low-lying country is covered with a dense jungle of nipa and pandanus palms and occasional larger trees, tangled with rattans and other creepers. Rattans are not found at altitudes above 4,000 ft. The coast vegetation consists mainly of mangroves, casuarinas, and sago and nipa palms; it is from the nipa palm, not from the sago palm, that the natives obtain their *sagoweer* (*sagueir*). Damar trees grow in various parts of the island, but not so profusely as in Borneo. The soil is extraordinarily fertile, and it is certain that when transport difficulties have been overcome Dutch New Guinea will be an important timber and rubber-producing area.

Sugar-cane is grown in many areas, and rubber, nutmeg, bananas, yams, bread-fruit, ginger, vanilla and tobacco are also widely found. The tobacco, which is probably indigenous, is of excellent quality. There are many coconut, sago, and areca palms, and bamboo, rattan, mangroves, and casuarinas all grow profusely. An edible forest fruit called *matowa* is much commended. Rice, however, is hardly grown at all, and there are no systematic cultures on scientific lines.

The main food of the natives in many parts of the island, especially south of the central mountain range, is sweet potatoes. In the west the chief food is sago.

There are no carnivora; hence forest cassowaries, wild pigs, and brush turkeys abound. But, generally speaking, there is a lack of game in the forests. The natives eat kangaroos, wallabies, opossums, serpents, crocodiles, dogs. rats, and. in fact, every kind of animal food procurable, but they breed no animals except pigs. Hornbills are a favourite article of food, and kingfishers, pigeons, and parrots abound.

(2) *Fisheries*

On the north coast of Dutch New Guinea there are pearl fisheries, and trepang (*bêche-de-mer*) is collected on many parts of its coast and the adjacent islands. As a general rule, the natives avoid deep water, and confine their sea-fishing to the near neighbourhood of the shore. Fish is abundant in all the rivers. Crayfish, mussels, and other shell-fish are popular articles of diet. Fresh-water tortoises are common.

(3) *Minerals*

It is known that gold, silver, lead, zinc, cinnabar, osmiridium, manganese, and graphite exist in New Guinea, but the investigation of the mineral wealth of the Dutch territory has scarcely begun. The regions in the centre, which contain the older rocks, have hardly been explored at all.

Coal has been found in many districts. It is most abundant in Lakahia, south of Etna Bay. It exists also a few miles from Tuwasai, on Bintuni Gulf (the inner part of McCluer Gulf), where the ground is dry and hard. Near Tipua Camp, in the basin of the Iwaka River, several seams of soft and crumbling coal have been discovered, varying in thickness from 4 in. to 8 in., but it forms poor fuel. Coal has also been found near the North-West and Blumen rivers, and one of the tributaries of the former was for this reason named Coal (Steenkool) River. Brown coal is found on the east side of the island of Salawati. Black coal has been found north of the Van Rees Mountains, on the Momberamo River, and in its neighbourhood there is argillaceous iron ore.

Copper is reported from the neighbourhood of the Biri River in the north-east.

No alluvial goldfields of importance have been discovered, and the only veins known are in the British territory. *Gold* has, however, been found in small quantities in the beds and banks of many rivers flowing north or south from the main ridge of mountains, indicating possible wide distribution in the mountains.

There is certainly a great deal of *mineral oil* in the subsoil. Close to the coal found at Tipua were many patches of dead forest, which had perished through oil oozing from the soil. Petroleum springs have been found between the Rivers Sara and Kaitro in the area between Bintuni and Arguni Bays, and also in the neighbourhood of Etna Bay. Hot springs, which are regarded with great awe by the natives, are found in various districts, notably in the bed of the Miso River, There are two salt springs near the mouth of the Tami River, in the same region, and south of the Sirami is a warm mud spring.

(4) *Miscellaneous Industries*

On the mainland and in the islands off the coast of New Guinea industrial activity is confined almost entirely to boat building, the manufacture of rough pottery, and plaiting. The natives make great use of a wood called *gofasa* for boat-building. This is chiefly obtained from the island of Misol, off the north-western coast. The inhabitants of Salawati Island are exceptional in being bold seamen, and they construct good sea-going praus, which they manage with great skill. Most of the native tribes still use stone axes. Bows and arrows are used for hunting the cassowary, which supplies not only food but feather ornaments, hair-combs, bone daggers, and arrow-points made from bone-splinters and claws.

(C) COMMERCE

(1) Domestic

Towns and Settlements

The principal settlements are all ports, and the trade of Dutch New Guinea is confined to a small number of places more or less regularly visited by ocean-going steamers.

Fakfak is on the Onin Peninsula. An Assistant Resident lives there, and there are a few Chinese officials and a score of native policemen under a Dutch officer. The administrative building and the other houses are on the slopes of a hill rising to a height of 345 ft. This port lies opposite the island of Ceram, and is much visited by traders from the Moluccas. Nutmegs are cultivated for export on a small scale.

Humboldt Bay is divided into an inner and an outer bay by a small tongue of land covered with coconut and other trees. The settlement is called Hollandia Bivouac. The chief food of the local natives is sago, which is stored in baskets. Fish is largely consumed, and pork on special occasions. The natives also eat coconuts, bananas, and sugar-cane. Their chief beverage is coconut milk, but they are intemperate consumers of tobacco. In the early part of the war German missionaries and traders used to ship produce and birds-of-paradise *via* Humboldt Bay, until the traffic was stopped by the British occupation of German New Guinea.

At *Kaimana*, on the south-west coast, the Netherlands New Guinea Trading Company has a *toko*, and there are two belonging to Arab traders. The Rajah of Onin has a large house on the shore, his subjects residing in huts adjoining.

Kokas, on the north side of the Onin Peninsula, and *Sorong*, on the north-west coast of Arfak, are ports used for the export of bird-of-paradise skins and damar.

Manokwari, on Dorei Harbour, lies at the extreme north-western corner of Geelvink Bay. The Papuans here have come much more under the influence of foreigners, who frequently visit Geelvink Bay to trade. The construction of the houses is different from that customary elsewhere in the island, the dwellings being built on piles, with a middle section which forms a kind of boathouse. The whole structure is covered by an oblong pointed roof. The boats are often large enough to take fifty people, and are used for plundering raids. Manokwari is the seat of an Assistant Resident, although the site is very unhealthy.

Merauke is a fairly busy settlement, with two European shops, about a dozen Chinese establishments, and a Roman Catholic mission. It is the seat of an Assistant Resident, and a director of the Merauke Company resides there to manage wholesale trade, both import and export. The native demand for iron and steel goods, particularly axes, is rapidly increasing. The exports are chiefly copra and bird-of-paradise skins (see below, p. 27). The natives are too lazy to attempt to develop the copra trade, and foreigners are not welcomed by them. The normal export of copra, however, is about 600 bags per vessel. Merauke is on flat ground, surrounded by dense woods, with clearings here and there, in which the natives have made plantations of bananas, sugar-cane, and coco-nut palms. The settlement is surrounded by swamps, but the Dutch have ditched and dyked the site and made it fairly secure from floods. The food of the natives consists of pork, sago, sugar-cane, tree fruits such as coco-nuts, bananas, and berries, tubers such as *taro* and *œbis* (resembling potatoes), other root vegetables, and mushrooms.

Other settlements on the coast are *Patipi* and *Segaar*, near the entrance to McCluer Gulf. Patipi consists of about forty houses, with 500 inhabitants. It lies in a sheltered position, and is built partly in the water and partly on the shore. Segaar, on the bay of that name, is built wholly in the water, with a mosque on the shore. The site having proved unsuitable for trade, a customs-house and small landing-places were made some distance to the east.

(2) FOREIGN

(*a*) *Exports*

Resins such as gum damar, which is valuable as the raw material of varnish, bird-of-paradise skins, and copra are almost the sole exports of Dutch New Guinea. It is the male bird-of-paradise that provides the feathers which are in such great demand in Europe; there is a large variety, forty species of this bird being found in New Guinea, and the fashion in feathers is continually changing. Now that the natives have realized what prices are obtainable in Europe, they have increased their demands, and 8,000 birds bought in 1913 at Fakfak and Kokas were sold for £40,000. Chinese traders visit these two ports and others in Dutch New

Guinea, and purchase the birds from Chinese storekeepers at the coast towns, who buy them from the native chiefs. The Chinese storekeepers pay for the birds in kind, and fix their own prices. They have been engaged in the trade in Geelvink Bay for more than two centuries, supplying the demand for bird-of-paradise plumes in China. The coastal natives try their utmost to keep the bird-hunters of the inland forests in ignorance of the value which bird-of-paradise plumes have attained in European markets.

According to a report of the Dutch Colonial Office the price of bird-of-paradise skins at Merauke was in 1918 about 30 to 35 florins apiece, or about £3. The same authority gives the exports from Merauke for the years 1913 to 1916 as follows:—

Commodities.	Destination.	Value in florins.
1913—		
Copra	Holland	153,430
Bird skins	Holland, Germany and France	36,108
Other goods	Holland and Singapore ..	3,780
	Total	193,318
1914—		
Copra	Holland	105,259
Fish	Singapore	800
Bird skins and feathers..	Holland and Germany ..	58,894
Other goods	Holland and United States	954
	Total	165,907
1915—		
Copra	Holland	84,420
Bird skins and feathers..	Holland	36,820
Other goods	Holland and Singapore ..	870
	Total	122,110
1916—		
Copra	Unknown	5,682
Cowhides	Unknown	224
	Total	5,906

(b) *Imports*

Steel implements, especially axes and knives, are greatly sought after by the natives, and large quantities of beads are used by traders as a medium of exchange. Cotton goods do not yet appeal to the natives in general, but textile imports are slowly increasing. Sago is imported, though there are always superabundant supplies to be obtained locally with a minimum of effort.

The imports of Merauke, which come mainly from Holland and Singapore, include tobacco, alcoholic beverages, preserved foods, haberdashery, textiles, matches, and iron and steel goods. The Dutch Colonial Office supplies the following figures:—

— —	Total Imports.	Tobacco.
	Florins.	*Florins.*
1913	65,733	20,970
1915	85,654	27,170
1916	58,489	22,586

(D) FINANCE

The public finance of the Dutch East Indies as a whole is dealt with in *Java*, No. 82 of this series.

As already indicated, trade is carried on almost entirely by barter. On parts of the coast beads form a sort of currency. There are no banks.

(E) GENERAL REMARKS

Idleness and drunkenness are common throughout New Guinea among the male population. The women are treated as inferiors, and are forced to work on the land. Now that head-hunting has been checked on the coast, and in some districts perhaps abolished, the men appear to have no stimulus to energy of any description. They can obtain all the food they need without effort, or by the exertions of the women; and by cutting the flower-stem of the nipa, sugar, or coconut palm, and hanging a bamboo cup under the gash, they can obtain unlimited *sagoweer* (*sagueir*). Each man has thus his own supply of intoxicating fluid ready whenever required, and many spend a large part of their time in a state of torpor beneath their favourite trees. The sale of birds-of-paradise has brought wealth to the natives, and in some districts they are even becoming too lazy to catch the fish which abound in all the seas, or to make sago, which they are now importing from the Moluccas.

The indolence of the natives is the chief obstacle to the agricultural development of Dutch New Guinea. The marshy south-west coast has hitherto produced little else but sago, but the south coast, and parts of the northern and western coasts, are already important sources of copra supplies. The export of copra could be enormously increased if the natives could be induced to cultivate the coconut palm scientifically. Horses and cattle imported at Merauke have thriven. The soil inland from Merauke is exceedingly fertile, and there is no reason why a very large export trade should not be developed after the forests have been cleared. At present pioneers have to choose between importing labour, which is necessarily very costly, and trying to train the natives to habits of industry.

MOLUCCA ISLANDS[1]

(A) MEANS OF COMMUNICATION

(1) *Roads, Rivers, Posts, and Telegraphs*

There are very few roads in the islands other than native paths, and statute labour can only be employed in some areas which are under direct Government control. In Ternate there were 5·3 kilometres of gravelled road in 1913. In Amboina road-maintenance is costly, owing to the bad quality of the gravel and river-stone available; about 25,000 florins were expended in 1913 on the upkeep of the road from Amboina town to Latuhalat and on the construction of a road from the latter place to the new wireless station at Oud Nusa Nive.

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[1] The principal islands are dealt with below, pp. 38-51.

There are no rivers of commercial importance.

Post offices are established in the principal towns, and in 1914 there were four kilometres of telegraph line on Ternate and eighteen on Amboina.

(2) *Shipping Lines*

The Koninklijke Paketvaart Maatschappij maintains a number of contract services calling, amongst other places, at various ports in the Moluccas. The three chief services are as follows:—

Service No. 28.—Every four weeks from Amboina for Saparua Island, Banda Neira Island, Geser Island, Amahai, Wahai and Piru in Ceram, and Kaimana, Fakfak, and Kokas in New Guinea.

Service No. 29.—Every four weeks from Amboina, calling at Banda Neira Island, Tual in the Kei Islands, Dobo in the Aru Islands, Lelingluan in the Larat Islands, Saumlakki in Yamdena Island, Tepa in the Babar Islands, and Merauke in New Guinea.

Service No. 30.—From Amboina every four weeks for Namlea and Laiwui in the Obi Islands, Bachian Island, Ternate Island, Tobelo, Buli, and Weda in Halmaheira Island, Sorong, Manokwari, and Hollandia Bivouac in New Guinea, Roön Island, Wakde Island, and Bosnik Island.

By the new contract which came into operation on January 1, 1916, the Koninklijke Paketvaart Maatschappij has to maintain these and 27 other services. The contract is for ten years, and 1,500,000 Dutch nautical miles must be covered, including the voyages of certain vessels to Singapore, Penang and Portuguese Timor, not on regular contract services. The company must carry all mails required, and receives from the Government 25 cents per nautical mile traversed, up to a maximum of Fls. 500,000.

Amboina and Ternate are also in constant steamer communication with Java and Celebes, by a fortnightly contract service of the Koninklijke Paketvaart Maatschappij.

(3) *Cable and Wireless Communication*

Ternate has been connected with Kema, near Menado (Celebes), by a Dutch cable since 1913. The Dutch Government originally intended to lay a number of cables to connect the principal islands east of Celebes, but this idea was abandoned in favour of a plan to be carried out after the war for the erection of a number of wireless stations.

The erection of wireless stations at Amboina and Banda Neira has brought those islands into direct communication with Java.

(B) INDUSTRY

(1) *Agriculture*

Except some of the more southern islands and a few volcanic cones, the Moluccas are thickly covered with forest, and are suited for agriculture. In the Timor Laut Islands maize is the staple food, and it is much cultivated in Sermata, Roma, and the Kei Islands. Generally speaking, rice is only of secondary importance. In most of the islands sago is very important, especially in Halmaheira and Ceram; in the last-named island and Obi it grows wild.

The soil and climate are remarkably well adapted for the growth of spices, particularly cloves and nutmegs, with mace. Formerly the Dutch, by destroying the plants elsewhere, created a monopoly for the production of cloves in Amboina and of nutmegs in Banda, but the restriction does not operate now; cloves are grown on Ternate, and nutmegs in Ceram, Amboina, Ternate, Tidore, Bachian, and Obi, in the last of which islands they are found wild. Pepper grows on Ternate and Amboina.

Coffee is grown by the Dutch on Ternate, where in 1914 there was a plantation of 238 acres, and also on Tidore, Bachian, and Ceram. Cocoa is cultivated on Bachian and Ceram. Tobacco is grown especially in Tidore, Bachian, and Buru, and cotton on Tidore, Buru, and Amboina. In Ternate in 1914 there was a rubber estate of 90 acres, planted with *Hevea*.

Forest produce is collected by the inhabitants in many of the islands. Gum damar is procured especially from Halmaheira, Ternate, Bachian, Obi, and Ceram. Coco-nuts are found throughout the Moluccas, and the trade in copra is becoming more important than that of cloves. Cajuput oil comes chiefly from Buru and Ceram. The nipa palm, from which sagoweer is derived, grows in Halmaheira, the Kei Islands, and elsewhere. Sugar-cane grows in Amboina, the Aru Islands, and Ceram Laut. The seedless bread-fruit appears in Amboina, and bananas, yams, papaws, mangoes, and other fruits and vegetables are found on many of the islands.

The thick forests that clothe most of the islands produce excellent timber of many varieties, the best coming from the Kei Islands (where much shipbuilding is carried on), Ceram, Ceram Laut, the Goram Islands, Banda, Ternate (which is especially noted for ebony), and the South-Western Islands.

(2) MANUFACTURES

The main occupations of the native populations throughout the islands are agriculture and the collection of forest produce. The most industrious natives are those inhabiting the less fertile islands. Thus, in

Makyan, where neither sago nor coco-nuts grow, the natives are hard-working and succeed in tobacco cultivation, while their neighbours in Ternate and Tidore are conspicuously lazy. The pearl fisheries of the Aru Islands are famous, and attract Japanese and Filipinos. The Celebes Trading Company is actively engaged in these fisheries. Smiths' work is done by the inhabitants of Tidore, the Kei Islands, and Timor Laut. The best boats are built on the Kei Islands and Ceram Laut. Weaving and plaiting are practised on many islands.

There is an ice and mineral-water factory at Amboina, and also a sawmill. At Ternate there is an ice factory. In the residency of Amboina the factories and workshops employing five or more persons on June 1, 1914, were thus officially classified: sawmills, 4; shoe factories, 3; bookbinding works, 1; printing works, 1; vegetable oils manufactory, 1; smithies, 1; ice factory, 1.

(3) *Minerals*

Inferior coal and lignite are found in Bachian and Ceram. Gold and copper have been found in Bachian, and naphtha in the eastern part of Ceram. Hot springs are common in many of the islands. The larger islands are only partly explored, but at present no important mineral deposits have been proved to exist anywhere in the Moluccas, though it is asserted that Ceram is rich in petroleum.

(C) COMMERCE

Statistics of the foreign trade of the Moluccas are difficult to obtain, for there is much confusion in the Dutch official publications between exports to Java and other parts of the Outer Possessions, and to foreign countries. The same remark applies to imports. As a result of the large trans-shipment trade at Macassar and Java, items are often included in the returns both of the ports in the Moluccas and the ports of transshipment.

Retail trade is almost entirely in the hands of the Chinese, though the Arabs have relatively a large share, and in Banda Neira Island are predominant.

(1) *Exports*

The exports of the Moluccas consist mainly of copra, spices, hardwoods, gums, and pearls. Fish, trepang, tortoiseshell, and swallows' nests are also largely exported.

Dutch official records state that the total value of the foreign exports from Ternate and Amboina Residencies in 1915 was Fls. 991,000 and Fls. 1,556,000 respectively, while the *Encyclopaedie van Nederlandsch-Indië* gives the value of the total exports to all destinations from Amboina Residency in the same year as Fls. 2,910,000. The cajuput oil exported from Amboina Residency amounts in value to about Fls. 200,000 annually; it comes chiefly from Buru, and goes mainly to Macassar and Singapore.

The following figures for the years 1914 and 1915 taken from official publications of the Encyclopædisch Bureau, show the quantities of the principal exports from Ternate and Amboina:—

——		1914.	1915.
		Tons.	Tons.
Cajuput oil	Ternate	—	—
	Amboina	37	14
Cloves	Ternate	—	—
	Amboina	250	189
Coffee	Ternate	14	20
	Amboina	18	13
Copal	Ternate	3,233	2,300
	Amboina	477	1,245
Copra	Ternate	3,437	1,963
	Amboina	4,184	4,267
Damar	Ternate	111	7
	Amboina	1,073	1,114

—		1914.	1915.
		Tons.	Tons.
Dye woods	Ternate	—	5
	Amboina	78	208
Ebony	Ternate	1,027	521
	Amboina	103	356
Mace	Ternate	16	20
	Amboina	247	197
Nutmegs	Ternate	116	142
	Amboina	1,195	1,239
Rattans	Ternate	48	67
	Amboina	652	536
Scented wood	Ternate	—	—
	Amboina	22	6

These figures appear to include exports to all destinations, including Java and other parts of the Dutch East Indies. It may be noted that two thousand litres of coco-nut oil were exported from Amboina in 1914 and 1915, and in 1915 four thousand rattan canes were exported from Ternate.

For individual ports the following figures are recorded :—

—	1913.	1914.
	Tons.	Tons.
Cloves (Saparua)	4	1
Copal (Labuha)	604	612
Copal (Ternate)	2,165	1,714
Mace (Banda Neira)	225	173
Nutmegs (Banda Neira)	803	680

(2) *Imports*

The value of the foreign imports into Ternate and Amboina Residencies in 1915 was recorded as Fls. 684,000 and Fls. 1,162,000 respectively, while the *Encyclopaedie van Nederlandsch-Indië* states that the imports from all sources to Amboina Residency in the same year amounted to Fls. 3,100,000.

The following figures for the years 1914 and 1915, taken from official publications of the Encyclopædisch Bureau, show the quantities of some of the principal imports to Ternate and Amboina Residencies:—

—		1914.	1915.
		Tons.	Tons.
Biscuits	Ternate ..	30	9
	Amboina ..	34	17
Condensed milk ..	Ternate ..	27	23
	Amboina ..	35	44
Husked rice ..	Ternate ..	4,722	4,472
	Amboina ..	8,496	8,151
Meal (mainly wheat) ..	Ternate ..	51	51
	Amboina ..	143	42
Roofing iron ..	Ternate ..	48	16
	Amboina ..	35	—
Tea	Ternate ..	12	11
	Amboina ..	5	6
Tobacco	Ternate ..	85	34
	Amboina ..	55	35

The value of miscellaneous iron and steel goods imported into Ternate and Amboina Residencies in 1914 was Fls. 26,000 and Fls. 20,000 respectively, but in 1915 sank to Fls. 7,000 in each case.

(D) FINANCE

The Crediet- en Handelsvereeniging Banda has branches at Banda Neira, Amboina, and Ternate. The Nederlandsch-Indische Escompto Maatschappij, the Asiatic Petroleum Company, the Standard Oil Company of New York, and the Obi Gom Compagnie have agencies at Ternate. The Moluksche Handelsvennootschap is established at Ternate and Amboina.

The public finance of the Dutch East Indies as a whole is dealt with in *Java*, No. 82 of this series.

(E) GENERAL REMARKS

The production of copra is becoming the most important industry in the Moluccas, but the islands will always continue to be noted for spices, for the cultivation of which their soil and climate are peculiarly adapted. There are many areas suitable for rubber cultivation. Coffee, cocoa, tobacco, and cotton are already successfully cultivated on several of the islands. The indolence of the natives is the chief obstacle to industrial development: it is said that the native Christians are the laziest of all.

V. NOTES ON THE PRINCIPAL MOLUCCA ISLANDS

HALMAHEIRA (GILOLO)

HALMAHEIRA (= mainland) is about 200 miles long, and has an area of about 6,500 square miles (including the islets close to the shore), but its whole population amounts to only 30,000, most thickly distributed in the northern peninsula. It resembles Celebes in shape, having four peninsulas that meet at a central point, a long western coast, and three deep gulfs on the east. It is very mountainous. The northern peninsula mainly consists of two mountain ranges, between which lies a well-cultivated, undulating plain. The mountains along the western coast are volcanic, and at least one, Gem Kemora (4,922 ft.), is active. The other three peninsulas are traversed by mountain chains, from which spurs extend to the coast; there are summits from 3,000 to 4,000 ft. high. The mountains are thickly wooded. There are several lakes and numerous rivers, but none of much importance. At Buli and Weda there are anchorages.

The chief means of livelihood of the inhabitants are agriculture, hunting, and fishing. The main products are rice, sago, coconuts, mother-of-pearl, trepang, and damar. There are pearl fisheries in Kayu Bay, on the east of the island, but the yield is not great. The forests contain a great variety of trees, but the timber trade is small, owing to the absence of satisfactory waterways. The inhabitants are Alfurs in the north and Mohammedans along the coast.

MOROTAI (MORTI)

Morotai lies 14 miles north-east of Halmaheira. It is more than 50 miles long, and from 13 to 26 miles wide. It is well wooded and hilly, the highest point being about 3,000 ft. There are numerous rivers, navigable by small boats for some distance inland. On the river banks and in the flat south-western part of the island are forests of sago palm, and inland there are many damar trees. There is a small resident population living in the villages along the coast, but strangers come from Halmaheira and elsewhere to collect gum damar and to fish among the islands off the west coast. Wajabula is the chief *kampong* (village). Near it are cliffs with birds'-nests, and a score of men are permanently retained there by the Sultan of Ternate to collect the nests.

TERNATE

Ternate, the northernmost of the line of islands off the west coast of Halmaheira, has an area of about 25 square miles and is 6 miles across. It is the seat of an ancient sultanate, and now contains the chief town of the Residency of the same name. The island is composed almost entirely of a conical volcano (5,184 ft.) with four peaks, which is constantly active. It is densely wooded, and on the south and south-east is cultivated. Between the lava ribs are pieces of flat ground planted with rice and maize, and the island also produces sago, coffee, pepper, nutmegs, and cloves. Between Ternate and Tidore is a fine harbour. There is no bar, and vessels anchor in 15 to 20 fathoms on a good holding bottom of stones and sand. They can load and discharge at the Government landing quay. The town of Ternate (pop. 9,000) contains a third of the population of the island, and is an "open" port. Many of the inhabitants are "burgers," and are exempt from statute labour wherever they reside. The great majority of the population of the island are Mohammedans.

TIDORE, &c.

Tidore, situated rather more than a mile south of Ternate and of about the same size, was also the seat of a historic sultanate. It is a small mountainous island, of which the southern part is entirely occupied by a volcanic peak (5,808 ft.), no longer active. The northern half of the island is a rugged mass of hills, descending steeply to the sea, with a few level spots near the beach. Below the 1,000 ft. level fruit, cotton, nutmegs, rice, maize, tobacco, and coffee are grown, especially on the eastern side; the soil is remarkably fertile, but the inhabitants have no great reputation for industry. They fish and cultivate gardens. Many travel through the islands with portable smithies, making axes and knives. The chief town, Soasia, is on the east coast.

The other islands off the west coast of Halmaheira are Maré, Motier, Makyan, and Kayoa. *Maré* is called Potbakkers Island, because in its south-western portion there is excellent clay, from which the inhabitants make earthenware vessels for the whole of Ternate Residency. Women and children do all the hard work of the clay industry, while the men fish. Formerly the men used to make salt, but this now comes from Celebes and elsewhere, as the Moluccas are not included in the Government monopoly. *Motier* serves as a temporary habitation for the dwellers in other islands, who come here to cultivate plantations and gardens in its fertile volcanic soil; forests grow up to the summits of the mountains (over 2,750 ft.). *Makyan*, whose highest point reaches 4,166 ft., suffered from eruptions in 1861 and 1890; its uneven surface is covered with vegetation. The inhabitants (8,000) are engaged in growing maize, fruit, vegetables, and tobacco, and in fishing and weaving. Sago has to be imported, but some sugar and rice are grown. *Kayoa* is nearly 10 miles long; it has a range of hills, rising to 1,181 ft., along almost its entire length.

BACHIAN (BATJAN) GROUP

To the south of this chain lies the Bachian group, the chief of which is the island of *Bachian*, 52 miles long with a mean width of 23 miles. Bachian is very mountainous, the northern part being volcanic;

the central part, where there is an isthmus, is much lower than the land to north and south, and the greatest heights are at the southern extremity. There are no active volcanoes, but there are sulphurous springs at the foot of Mount Sibela (7,215 ft.), and Bachian is liable to earthquakes. The mineral resources include gold and copper in small quantities, and coal, which is worked intermittently at small profit. The interior of the island is densely wooded, and has few inhabitants. There are numerous streams, but only a few can be entered by small boats. Good timber is found; sago is grown in the swamps, and coconuts on the coast. The Dutch have coffee and cocoa plantations. Nutmegs, tobacco, copal, and gum damar are also exported. The chief town, on the west coast, comprises the Christian village of Labuha and the Mohammedan village of Amassing.

The Batjan Archipel Maatschappij, a Rotterdam company with a capital of Fls. 500,000, fully paid, has lately been negotiating in Geneva for the disposal of its concession, including all the agricultural, mining, timber, and pearl-fishing rights of the islands, valued at £150,000.

OBI (OMBI, OMBIRA) ISLANDS

The group consists of Great Obi, five smaller islands, and many mountainous islets. It lies to the south of the Bachian group. *Great Obi* is more than 50 miles long and 20 miles wide. It is very lofty, rising to nearly 5,000 ft., but is not volcanic. The mountains decrease towards the east, where for 10 miles the ground is low and marshy in places. The whole island is densely wooded. There are numerous rivers, which descend steeply from the hills, but have low banks on their lower course; they can be entered by small craft only, for their mouths are barred. Coal and lignite are found, and there is believed to be gold, but Great Obi is for the most part unexplored. The island has almost no resident population, as it is supposed to be haunted, a reputation which may have been manufactured for it when it was a favourite resort of pirates.

The other islands in the group are hilly and have steep coasts. The group is visited by many people from Tidore, Makyan, and Bachian, who tap sago, collect wild nutmegs, gum damar, and rattans in the forests, and go fishing and diving for pearls in the neighbouring waters. After a stay of some months they proceed to Labuha to sell their store.

BURU

Buru is an oval island, about 90 miles long and 50 miles wide, with an area of nearly 3,400 square miles. It has many lofty mountains, especially in the north-west, where are Mount Tomahu (8,524 ft.) and Kaku Siel, not much lower. In the east the mountains are comparatively low. Surrounding Kayeli Bay is a wide, circular, level plain, constituting almost one-quarter of the island. Most of Buru is covered with forest, but the north is somewhat bare and overgrown with coarse *kussu* grass. The island has many rivers, the chief being the Wai Apu, which flows through swamps full of fern. The river-mouths, which are obstructed by bars, offer anchorage to native craft; the only anchorage for bigger vessels is afforded by Kayeli Bay. Waikolo Lake, near the centre of the island, 1,900 ft. above the sea, lies at the foot of Kaku Siel, and is some miles across. In the swampy parts, especially Kayeli, Lisela, and Waesama, many sago palms grow. Other products are tobacco, maize, sweet potatoes, cotton, and a great deal of cajuput oil, which is exported from Kayeli. Not much rice is grown in the interior. There is good timber, especially teak, ebony, and kanari.

The Alfurs of the interior, a timid and peaceful folk, who dislike coming near the coast, are engaged in collecting forest produce, obtaining timber, hunting, or practising very primitive agriculture. The Mohammedan and Christian inhabitants of the coast are engaged in trade, hunting, fishing, and gardening.

Many native Christians live at Masarete, on the west coast; Kayeli, on the east coast, is an unhealthy settlement of about 70 houses.

CERAM

The island of *Ceram* lies east of Buru, and is divided from it by the Buru Straits, in which are several islands. It is 216 miles long, and its area, including the adjacent islands, is estimated at 6,621 square miles. It is traversed from east to west, near the north coast, by a lofty range of mountains, the highest of which is Nusaheli (9,612 ft.), while at least four other peaks exceed 6,000 ft. In many parts the mountain chain extends to the coast; in others it gradually gives place to lowland, while in some parts the sea is fringed by swamps. There are many rivers, which generally run north; the chief are the Ruata, Bobot, and Saputana. They are, however, mostly unnavigable, and are often dry in the dry season. Amahai, the only harbour, is fairly good. The island is very little known, the only part with which Europeans are familiar being the western end, where the peninsula of Huammual is connected with the main island by a low, narrow isthmus. There are dense forests everywhere, which provide excellent timber; in all the swampy valleys the sago palm grows wild. The chief products are sago, timber, nutmegs, gum damar, and other forest produce. At Wahai there are European coffee and cocoa plantations; tobacco and coconuts are also grown there. The island is believed to contain minerals of value, including petroleum.

Alfurs are the only inhabitants of the interior, but on the coast they are mixed with Javanese, Macassars, and Malays. The coast population is mostly Christian and Mohammedan, but the Christian Alfurs do not differ much from their heathen neighbours.

CERAM LAUT AND GORAM ARCHIPELAGO

Ceram Laut is a cluster of islands on one coral reef about 20 miles long. Included with it are Geser and Kilwaru to the west, and the *Goram Islands* (Suruaki, Goram, and Manavoka) lie to the east-south-east. Most of these are covered with forests. There are no mountains in Ceram Laut of over 1,000 ft. Geser is a coal depôt, and Kilwaru a busy mart, where merchants from Ceram meet natives of New Guinea and the adjacent islands. It has a good anchorage. The principal article of export from Ceram Laut is trepang. The islands produce also sago, sugar-cane, coconuts, and timber of various kinds. The Goram Islands, with an area of about 150 square miles, are higher than Ceram Laut; they are more populous and more fertile. On Suruaki there are extensive swamps.

The chain is continued to the Kei Islands by the Matabello Islands, whose rugged hills are covered by coconuts, and the very similar Tior, Nusa-Tello, and Tionfoloka Islands. Some of these latter are entirely waterless, owing to the porous nature of the coral rock.

AMBOINA AND THE ULIASSERS

The island of *Amboina* or *Ambon* (from a Malay word meaning "mist") lies to the south-west of Ceram, and east of it is the group of small islands generally known as the *Uliassers*. Amboina is 32 miles long, and has an area of 386 square miles. The island is very irregular in shape, for it is divided into two unequal parts, Hitu and Leitmor, by a narrow alluvial isthmus. The mountains are volcanic, and though none are now active, hot springs and solfataras are found; and slight earthquakes are still experienced: the highest peaks are Salhutu (4,020 ft.) and Wawani (3,609 ft.). The rivers are small and not navigable. The soil is fertile and the island covered with vegetation. Among the chief products are sago, bread-fruit, coconuts, sugar-cane, maize, coffee, cocoa, pepper, and cotton, while cloves, though no longer enjoying their former artificial monopoly, are still very important; copra, however, is tending to replace them as the chief export. In the bay of Amboina are found 700 varieties of fish.

Amboina town is the capital of the Residency of the same name, and at one time was world-famous, when it enjoyed a monopoly of the clove trade. It has both a European quarter and a Chinese quarter. There is a good and safe anchorage in about 20 fathoms, about two cable-lengths from the shore. The pier has about 18 ft. of water at its end. There is also a coal wharf 90 yds. long with 24 ft. of water alongside. The inner harbour is almost landlocked. Altogether Amboina is the most civilized island and Amboina town the most important port in the Dutch East Indies east of Macassar.

Of the other islands in the group, Haruku and Nusa Laut both contain hot springs. The latter island is hilly, but with plains in parts near the sea; it has two good anchorages, available during both monsoons, and produces sago, coconuts, and cloves. Saparua falls into two portions, connected by an isthmus, about half an hour's walk across; it is hilly, but along the coast is flat ground covered with coconut trees. Cloves form the principal product; the sago grown is sufficient for the population. Melano is thickly wooded.

BANDA ISLANDS

The *Banda Islands* lie 60 miles south of Ceram and 130 miles south-east of Amboina. They are ten in number, and three are of fair size; six of them together make the harbour of Banda. The total area of the group is about 20 square miles. The longest island, *Banda Lontar*, is 7½ miles long, and has a crescent shape; the volcanic soil is covered with "parks" of nutmeg, the Banda Islands having formerly been the exclusive nutmeg garden of the world. The nutmeg trees grow under the shade of kanari trees, whose nuts produce an oil of value. Nutmeg trees begin to bear fruit from the eighth to the tenth year, and with careful tending the crop should not diminish till after the sixtieth. Many bear up to 100 years, and it is a local saying that a nutmeg tree lives as long as a man.

Mace grows round the kernel of the nutmeg. On *Banda Neira* is the town of Banda, one of the cleanest, neatest settlements of the Dutch East Indies. There are here some descendants of the original "perkeniers" who received estates in 1627, which they were required to plant with nutmeg trees. They had to sell the produce to the Dutch East India Company at rates fixed by the company. There is no other place of equal importance in the Dutch East Indies where the Arabs outnumber the Chinese. *Gunong Api* contains an active volcano (1,858 ft.), which is covered by bushes to within 700 ft. of the summit. No nutmegs grow on this island, but there are coconuts along the coast.

Nutmegs grow on Rum, Ai, and Rozengain, and coconuts on Rozengain and Pisang. Rum has a clean, white beach, frequented by turtles. Apart from nutmeg-growing, the principal industry of this group of islands is fishing.

KEI (KÉ) ISLANDS

This archipelago lies on the ridge that runs from Ceram as far as Timor Laut; it is separated by deep water from the Banda Islands on the west and the Aru Islands on the east. The whole archipelago has an area of 572 square miles. It consists of four groups—Great Kei (or Nuhu Yut), containing half the population, Little Kei and Kei Dula, the Tayando group, and the Kur group. *Great Kei* is a long, narrow island, 64 miles in length, with a narrow tongue of land at its southern extremity. It is mountainous and wooded, with patches of cultivation on the slopes; the mountains, which rise to nearly 3,000 ft. in the north, traverse the centre of the island. The coast is in most parts high, with steep cliffs.

The other islands are comparatively low, but there are hills in the south and north-west of Kei Dula. They are all covered with dense forest and produce excellent timber, some of which excels *jati* wood for boat-building. The inhabitants are famed for boat-building, the best craft being called *skanderias*. Coconuts grow everywhere in abundance, and there are also areca palms, bananas, sago, maize, and vegetables. Most of the islands are encircled by extensive shoals. Trepang and the tortoise are found in great numbers on the many reefs, and the neighbouring seas teem with fish, but the natives seldom go outside the reefs or fish in waters of greater depth than 10 fathoms.

The settlements are round the coast; the inhabitants, who are friendly, are good blacksmiths and goldsmiths, and are renowned for their carving, the cave decorations of these islands being famous. Tual, the chief town, is the seat of a Dutch "Contrôleur," and a Dutch firm trades there in teak, ironwood, and other valuable timber.

ARU ISLANDS

This group, lying to the east of the Kei Islands, in the shallow sea between New Guinea and Australia, consists of one big island, *Tanabesar*, 122 miles long and 58 miles wide, and nearly 100 smaller isles. The area of the archipelago is 3,244 square miles. Tanabesar is intersected by several channels (*sungi*) of varying width, and less than 3 fathoms in depth, which practically divide it into six separate islands. The whole group is of low elevation, and contains no rivers of note. The surface is mostly covered with virgin forest, largely composed of screw pines, palms, kanari trees, and tree ferns. In Tarangan, the southern portion of Tanabesar, the forest alternates with grassy plains. The *sungi* are lined with mangroves. In many parts there are impassable swamps. The soil is fertile, but little cultivated.

The inhabitants of this group are very uncivilized; their agriculture is primitive; their villages on the west side are mostly in wooded places, on the east side on rocks. Dobo, on the small island of Wamar, in the west, is a trading rendezvous for Papuans and Moluccans, and the Aru islanders take their produce to it. Sago, coconut, and areca palms, tobacco, sugar cane, and maize are cultivated in the islands. Apart from agriculture, the chief occupations are fishing for trepang and sharks, diving for pearls, and hunting birds-of-paradise, whose dried skins are an important article of commerce. Japanese and Filipinos come here for pearl-fishing.

TIMOR LAUT AND TENIMBER GROUP

This archipelago (sometimes known as the South-Eastern Islands) consists of 66 islands, most of which are known under the collective name of Tenimber, though the two largest, Yamdena and Selaru, together with the islands between them in the Egeron Strait, are grouped together under the name of Timor Laut. The only high parts are the island of Laibobar (above 1,500 ft.), probably a volcano, Molu, Vordata, Selu, and a part of the south coast of Yamdena. Earthquakes sometimes occur. *Yamdena*, which is 74 miles long and 26 miles wide in the middle, has a much indented coast; there is a low, narrow foreshore planted with coconuts and mangroves, and fringed in most places with precipitous cliffs 60 to 80 ft. in height, on which are most of the stockaded villages where the bellicose inhabitants live. The west coast is lower than the east. The hills on the east coast are densely wooded. *Selaru* is 30 miles long and is mostly flat; it is covered with high grass and is less wooded.

On all the larger islands there are extensive swamps. The trees are of considerable height, but more sparse than on the islands previously described, and of no very great girth. The islands are not fertile, but provide for the needs of the inhabitants. Maize is the staple food; extensive coconut plantations line the shores; a little rice and sago are cultivated, also bananas, papaws, mangoes, manioc, and sweet potatoes.

Though the natives do little in agriculture, they are industrious fishermen, and some work in iron, gold, and copper; traders, well armed, barter piece-goods and hardware for turtle, trepang, copra, some kinds of wood, and an inferior sort of mother-of-pearl. The inhabitants, especially in the interior of Yamdena, have not attained a high degree of civilization. The women do more work than the men, both in the fields and in fishing, besides weaving *sarongs* and baskets. Fishing is practised on the coasts with lines or with bows and arrows, but not with nets.

SOUTH-WESTERN ISLANDS.

This collective name is given to the two diverging chains of islands which continue the lines respectively of the lesser Sunda Islands and Timor. The former, the northern chain, includes Wetar, Roma, Damar, Nila, and Serua, and is continued through Manuk to the Banda Islands on the inner volcanic band; the latter, the southern chain, includes Kissa, Letti, Moa, Leikor, and Sermata, and is continued through the Babar, Timor Laut, and Kei archipelagos to the southern Moluccas.

Wetar (*Wetta*), the largest island, is about 70 miles long and more than 20 miles broad. The land is broken and mountainous, especially on the north side, where precipitous cliffs reach the sea. The highest elevation is Tower Hill (4,390 ft.). There are many rivers and swamps, some of which are dry during the east monsoon. Most of the country is bare, but there are forests at certain places, and on the south side there is grassland. The chief anchorage is the open bay of Ilwaki, on the south of the island, which is visited by steamers of the Koninklijke Paketvaart Maatschappij. The population is about 7,000. Head-hunting is still practised. Traders barter rice, piece-goods, and arms for wax, trepang, and tortoiseshell.

Roma is 11 miles long and 6 miles wide. It is of volcanic origin, and contains hot springs; its highest point is 1,905 ft. The island is very fertile, especially in the south-east. The staple product is maize, but areca palms and sago are also common. The inhabitants of Kissa migrate to Roma in periods of great drought in their own island.

Damar has an active volcano (3,110 ft.), and suffers from earthquakes. There is some lowland on the west, but everywhere else the land rises steeply from the sea. Kolowati Bay penetrates 4 miles inland, with great depth of water. The island is extraordinarily fertile. Near Wulur there are hot springs.

Nila has a lofty active volcano (3,908 ft.). The inhabitants grow coconuts and raise hops and poultry. They formerly cultivated cloves.

Serua has an active volcano (2,294 ft.); the island is covered with coconut, kalapa, and mango trees.

Kissa is an unhealthy island about 7 miles long and 5 miles wide. It is mountainous and bare, with very few trees, and almost rainless; sometimes a whole year goes by without rain. The coast is high and rocky, broken in places by narrow sand beaches.

Letti (9 miles long, 5 miles wide) suffers from the same paucity of trees and rainlessness. A range of dome-shaped hills traverses the middle of the island from east to west, the highest point being 1,403 ft. The inhabitants are less prosperous than those of Kissa.

Moa is 25 miles long, and is divided into two hilly parts by a strip of low, marshy land, thickly wooded with sago trees. It is a very fertile island, and cattle, goats, pigs, and poultry thrive there. The inhabitants of Letti migrate to Moa when drought compels them to leave their own island.

Leikor, of coralline formation, nowhere rises more than a few feet above the sea. It grows nearly all the tobacco consumed in the Letti group, to which it belongs. Though the seas round Leikor swarm with turtle, the natives despise it. The island produces good buffaloes, sheep, goats, and pigs, though there are no rivers, and rain-water has to be stored in trenches.

Sermata, 15 miles long, the chief island of the Serwatti group, has a range of hills rising to 1,378 ft., the sides of which slope steeply down to the sea. The inhabitants live in twelve villages on the coast, surrounded by high stone walls. They are industrious and prosperous. They grow maize and yams, the latter in great abundance.

BABAR ISLANDS

Babar, 18 miles long and 4 to 18 miles wide, is mountainous (rising to 2,953 ft.) and thickly forested, and contains several rivers. Its low coast is covered with woods. The island is fertile, sago especially being grown in the swamps to the south-west. The other islands of the Babar group are bare and parched.

APPENDIX

I

BRITISH NOTIFICATION OF THE ARRANGEMENT AGREED UPON BY THE GOVERNMENTS OF GREAT BRITAIN AND GERMANY RESPECTING THE BOUNDARIES OF THE POSSESSIONS OF THE TWO COUNTRIES IN NEW GUINEA, JUNE 18, 1885.

(See Hertslet, L. *A Complete Collection of Treaties, &c.* Vol. xvii, p. 457.)

The following arrangement has been agreed upon between the Governments of Great Britain and Germany, as to the boundaries of the possessions of the two countries in New Guinea:—The point on the north-east coast of New Guinea where the 8th parallel of south latitude cuts the coast, forms the boundary on the coast, and a line described as under determines the boundaries inland of the respective territories:

Starting from the coast in the neighbourhood of Mitre Rock on the 8th parallel of south latitude, and following this parallel to the point where it is cut by the 147th degree of east longitude, then in a straight line in a north-westerly direction to the point where the 6th parallel of south latitude cuts the 144th degree of east longitude, and continuing in a west-north-westerly direction to the point of intersection of the 5th parallel of south latitude and of the 141st degree of east longitude.

The British possessions lie to the south of the line thus defined, the German to the north. The British possessions will not include Long Island, or Rook Island, or any islands adjacent to New Guinea to the northward of the 8th parallel of south latitude.

II

CONVENTION BETWEEN GREAT BRITAIN AND THE NETHERLANDS DEFINING THE BOUNDARIES BETWEEN THE BRITISH AND NETHERLAND POSSESSIONS IN THE ISLAND OF NEW GUINEA, MAY 16, 1895.

(See Hertslet, L. *A Complete Collection of Treaties, &c.* Vol. xx, p. 812.)

Art. I. The boundary between the British and Netherland Possessions in New Guinea starts from the southern coast of the said island at the middle of the mouth of the Bensbach River, situated at about 141° 1′ 47·9″ of east longitude (meridian of Greenwich).

Art. II. The boundary proceeds to the north, following the meridian which passes through the said mouth, up to the point where that meridian meets the Fly River.

Art. III. From that point the waterway (" thalweg ") of the Fly River forms the boundary up to the 141st degree of east longitude.

Art. IV. The 141st degree of east longitude after this forms the boundary up to the point of intersection of the boundaries of the British, Netherland, and German Possessions.

Art. V. Navigation on the Fly River is free for the subjects of both Contracting Powers, excepting as regards the carriage of warlike stores, and no duty shall be imposed on other goods conveyed by that river.

AUTHORITIES

HISTORICAL

A full list of Historical Authorities will be found in Handbook *Java*, No. 82 of this Series.

ECONOMIC

Encyclopaedie van Nederlandsch-Indië. [1st Ed., edited by P. A. van der Lith.] 4 vols. The Hague, Leiden. [1895-1905.]

——— [2nd Ed., edited by J. Paulus.] The Hague, Leiden, 1917, &c.

Jaarboek van Nederlandsch-Indië. Batavia, 1916.

Zuid-West Nieuw Guinea Expeditie. Leiden, 1908.

Regeerings Almanak voor Nederlandsch-Indië. Batavia, 1916.

Handboek voor Cultuur en Handelsondernemingen in Nederlandsch-Indië. Amsterdam, 1917.

Verslag omtrent Handel, Nijverheid en Landbouw van Nederlandsch-Indië. Batavia, 1914.

BROWN, J. MACMILLAN. *The Dutch East.* London, 1914.

CABATON, A. *Les Indes néerlandaises.* Paris, 1910. (Translated as *Java, Sumatra, and the other Islands of the Dutch East Indies.* London, 1911.)

RAWLING, C. G. *The Land of the New Guinea Pygmies.* London, 1913.

WALCOTT, ARTHUR S. *Java and her Neighbours.* New York and London, 1914.

WOLLASTON, A. F. R. *Pygmies and Papuans in Dutch New Guinea.*

WRIGHT, A. *Twentieth Century Impressions of Netherlands India.* London, 1909.

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No. 88
British New Guinea

I. GEOGRAPHY PHYSICAL AND POLITICAL

(1) Position and Area

The territory of Papua, or British New Guinea, comprises the south-eastern part of the island of New Guinea together with the D'Entrecasteaux, Lusancay, Trobriand, Woodlark and Laughlan Islands, the Louisiade Archipelago, and some other small groups off the south-eastern promontory. The boundary between Papua and Kaiser Wilhelm's Land follows the parallel of 8° south latitude from the east coast to 147° east longitude; thence it passes in a straight line to latitude 6° south and longitude 144° east; thence in another straight line to latitude 5° south and longitude 141° east, where it meets the frontier of Dutch New Guinea. Between British and Dutch New Guinea the frontier runs south from latitude 5° south along the meridian of 141° east longitude, until it meets the Fly River, which it follows until that river crosses the meridian of longitude 141°1′48″ east; after which the boundary follows this meridian to the south coast, at the mouth of the River Bensbach.

The total area of Papua, which is about 28 per cent. of the total area of New Guinea, is about 90,500 square miles, of which some 2,700 square miles is made up of islands.

(2) Surface, Coasts, Rivers, and Islands

Surface

The south-eastern part and the interior of the western part of Papua are very rugged and mountainous. A range of high mountains, known as the Main Range, runs from the Snowy Mountains in Dutch territory along the German frontier and south-east through Papua to its extreme eastern end. Only parts of this range have been explored. The loftiest peaks in Papua are situated in the middle region of the south-east, where it is called the Owen Stanley Range. On the north-eastern side of Papua the mountains approach the sea, and spurs form bold mountainous headlands such as Cape Nelson. There is, however, a good deal of low swampy land, 20 to 30 miles wide in places. At the extreme east the area of low-lying land is more restricted. The southern and south-western slopes of the Owen Stanley Range are as a rule some distance from the sea, and leave more flat land in that part of Papua, much of which is cultivated. At the head of the Gulf of Papua, particularly on its western side, there is a great area of flat, marshy country, lying practically at sea level and intersected by a network of creeks and swamps. This region extends 50 to 200 miles inland to the beginning of the mountain slopes.

In the region of Cape Nelson there are several extinct or dormant volcanoes. Steam is often emitted from Mount Victory. It is not improbable that further exploration will reveal other volcanoes. Slight earthquakes are not infrequent in the D'Entrecasteaux Archipelago, but are rare on the mainland.

Coasts

The coastline is much indented and the shores are rocky and steep in the eastern half of Papua, except at the head of the numerous inlets, where they are low and faced by beaches or mangrove swamps. Round the north and west of the Gulf of Papua the shores are low, swampy, and ill-defined.. On the south coast a fringing coral reef, broken by many passages, extends from about Redscar Bay to the east end of New Guinea and is continued into the Louisiade Archipelago (*see* p. 5). Except for the wide break off the Gulf of Papua, this reef is continuous with the Great Barrier Reef of Queensland, which stretches across Torres Strait in about longitude 144° east. The reef shelters the south coast during the prevalence of the trade winds, and makes anchorage safe and landing easy in the numerous bays. The other coasts of the mainland have no coral reefs. They are well provided with harbours, though few of these are of great size or suitable for large vessels.

Rivers

Several large rivers flow into the Gulf of Papua. The most important are the Fly, with its tributary the Strickland, Turama or Gawai, Wairori, Purari, and the smaller Lakekamu. The entrance to the Fly River is 50 miles wide, but the navigation of the river is difficult on account of uncertain channels and shifting sandbanks. Farther east are the Vanapa, Laloki, and Kemp Welch rivers. On the north-east coast, close to German territory, is the mouth of the River Mambare. The only other streams worthy of mention are the Kumusi, Musa, and Gira. These all flow out on the same coast as the Mambare; the last-mentioned immediately north-west of that river, the others farther to the south-east.

All rivers are perennial, but navigation is liable to be interrupted in years of drought. Shifting channels and snags present difficulties at all times. The Rona Falls, 200 ft. high, on the Laloki River, which flows into Redscar Bay, might be a source of water power for Port Moresby.

Islands

The island groups to the east of Papua include some of the most important parts of the territory. With the exception of a few low coral islands all are rugged, and generally lofty; some are partly volcanic; practically all are fertile.

A number of small islands are separated from the mainland by China Strait, a channel whose intricate navigation, strong tidal streams, uncertain winds, and lack of anchorage discourage its use by large vessels.

This group includes the small but important Samarai, or Dinner Island, about 60 acres in area and rising to a height of 155 ft.; Sariba or Hayter, somewhat larger; Sideia, or Basilisk Island, rising to over 1,000 ft.; Basilaki, or Moresby Island, about 30 square miles in area, rising to an elevation of 1,740 ft.; and several smaller islands. All these islands are surrounded by coral reefs. Samarai has anchorage but no harbour. Sariba has several good harbours, to one of which, Maga Ikarona on Stanley Bay, it was at one time proposed to transfer the settlement on Samarai, owing to congestion on its present site. Moresby Island has a fair harbour in Hoop Iron Bay.

The Engineer Group, east of Moresby Island, consists of four small lofty islands without harbours. Farther east is the Conflict Group of about 20 low islands surrounding a lagoon in which there is anchorage.

The D'Entrecasteaux Islands, the largest of all, comprise three principal islands—Normanby, or Duau; Fergusson, or Moratau; and Goodenough, or Morata, besides Sanaroa, or Welle, and numerous smaller islands. They are partly of volcanic origin. Hot springs and saline lakes occur on Fergusson and Normanby. Earthquake shocks are not uncommon. The islands are steep and mountainous; Goodenough, the loftiest, rising to over 8,500 ft.; but all are fertile. There are scarcely any coral reefs. The little known Sewa Bay, north of Massie Bay, on the west coast of Normanby, is a land-locked harbour, with an area of about 10 square miles and anchorage in 10 fathoms. It has at least one entrance with 20 fathoms of water. Anchorages for small vessels are numerous except in Goodenough. The waters of the group are incompletely surveyed.

The important Trobriand Islands lie north of the D'Entrecasteaux Islands. This group comprises several low coral islands, of which the largest is Kiriwina. On the west coast of this island there is reported to be a sheltered anchorage with easy entrance; but the north and east coasts, which are bordered by reefs, have no anchorage. Kitava, Kaileuna, and Vakuta are smaller islands. All are well watered and have a fertile, though shallow, soil.

The Lusancay Islands, west of the Trobriands, are low coral islets of little importance. Murua, or Woodlark Island has an area of about 200 square miles. The western part is over 1,300 ft. high, but the eastern half is lower. Although this island is much frequented there seems to be some uncertainty as to its extent and topography and even as to its exact position. The coasts on the whole are rugged and steep. There are several fair harbours, principally on the south side, of which the best is Guasopa. The Laughlan, sometimes miscalled M'Laughlin, Islands, east of Woodlark Island, consist of a dozen or more low coral islands partially surrounding a lagoon which affords good anchorage.

The Alcester, or Tokuna, Islands and Yanaba, or the Egum Group, are two collections of small rocky islands, south and south-west respectively of Woodlark Island. They have no harbour, but there is anchorage in the Egum lagoon.

The Louisiade Archipelago embraces most of the remaining islands. It is imperfectly surveyed, and may contain islands not shown on the chart. A large fringing reef encircles a great part of the archipelago, including all the southern islands. Within the archipelago, the Bonvouloir Islands consist of five or six small harbourless islands, 200 to 500 ft. in height. The Deboyne Islands, immediately east of the already mentioned Conflict Group, are larger and have much fertile soil. The principal of these, Misima, or St. Aignan, is about 100 square miles in area. It is mountainous, and rises to an elevation of 3,400 ft.; but there are extensive well-watered and fertile valleys. The coasts are steep, and there is no reef except on the south-east. Anchorage for large vessels is poor. The Renard Islands are low and rocky, but have some fertile ground. There are no harbours. The Calvados Chain is a group of high, rocky islets, among which navigation is difficult on account of reefs and currents. The anchorages are poor. The Duperré Islands are five small coral islets on an atoll reef, west of the Calvados Chain. Their only importance is due to the lagoon, Bramble Haven, which is an extensive safe anchorage, available to large vessels and with an easy deep entrance on the south-west. East of the Calvados Chain is Joannet, or Pana Tinani, Island, with an area of 25 square miles. It is mountainous, but well watered and fertile. The low, smooth north coast offers no anchorage; but the indented south coast has good anchorage in Hatilawi, or Joannet harbour. Sudest, or Tagula, the principal island of the Louisiade Archipelago, has an area of about 250 square miles. A lofty range extends along the island, culminating in Mount Rattlesnake, 2,545 ft. high; but there are large areas of fairly flat ground. Several streams are navigable by canoes for a mile or so from their mouths. A reef encircles the island, and there are several fair harbours, the best of which, between Sudest and Joannet Islands and bounded on the north and east by reefs, is Coral Haven. This harbour has secure and sheltered anchorage, and is accessible for large vessels. Rossel Island, the most easterly of the Louisiades, has an area of about 100 square miles. It is mountainous, rising to a summit of 2,750 ft., but its shores are low and frequently swampy. The island is fertile. There are many small streams. A reef surrounds Rossel Island and several islets to the east, and forms a large lagoon, into which there are several channels. This reef shelters the bays on the east, which afford good anchorage.

The islands lying in Torres Strait off the coast of Papua all belong to Queensland, with the exception of Daru, Bristow, Bampton, and a few smaller islands. For some years it has been proposed to transfer Saibai and adjacent islands from Queensland to Papua, but the transfer has not yet taken place.

(3) CLIMATE

The climate is hot and moist during the greater part of the year. The warmest period is from December to March with a mean temperature at or near sea-level of about 83° F. (28° C.). Places in the south-east are a degree or two cooler. The coolest period is from July to September with a mean temperature of about 77° F. to 80° F. (25° to 26·6° C.). The nights are never really cool, and the constant humidity of the atmosphere at most seasons makes the heat somewhat trying.

The prevailing wind from May to November is the south-east trade, which often blows strongly. It generally drops at night. This wind is succeeded by calms and variable winds; but the north-west monsoon sets in about December or January and lasts till March or April, when there is again a period with frequent calms. The north-west monsoon is intermittent and squally. Typhoons do not occur. Thunderstorms are frequent at the periods of calm before and after the monsoon.

Rain falls in all months, but principally from December to April, and is heaviest in February or March. The annual fall is greatest on the north-east coast and the eastern islands, 100 to 150 ins. (2·5 to 3·8 m.), and least on the south-west coast, which is sheltered by high mountains from the rain-bearing monsoon, 40 to 80 ins. (1 to 2 m.). The rainfall varies much from year to year, and every 5 or 6 years there is a deficiency severe enough to cause a drought in the less-watered regions of the south.

(4) SANITARY CONDITIONS

Papua is not healthy either to Europeans or natives; but its reputation for unhealthiness has probably been exaggerated. Knowledge of the nature of several diseases and adequate medical treatment have done much to reduce mortality in recent years. Efforts to improve sanitation, especially in the neighbourhood of white settlements, have made a marked improvement in the health of the white and native population. Samarai and Port Moresby are now comparatively healthy. The Gulf of Papua has a bad reputation which it probably merits. Disease-bearing mosquitoes can only be coped with locally, owing to the swampy nature of the country. Hospitals have been established at Port Moresby, on Samarai and Woodlark Islands, and Losuia in the Trobriands.

Malaria occurs throughout the territory; but it is seldom severe, and accounts for few deaths among the white population. Dysentery is more serious, and generally appears in the wet season. Every few years an epidemic occurs, and the natives suffer much. Blackwater fever is uncommon, and is usually mild. From time to time there are epidemics of beri-beri. Some success has been attained in places in combating this disease by adding proteids and fats to the native diet of rice. Yaws and several other venereal diseases are common, especially in the Trobriand Islands, but syphilis is rare. Leprosy is of occasional occurrence, chiefly in the Trobriand Islands and the Mekeo district. So far there is no systematic isolation of lepers. Elephantiasis is not common. There is no small-pox; but outbreaks from time to time in Dutch and German New Guinea have caused some apprehension in Papua. Many natives around Port Moresby, Daru, and other settlements have been vaccinated; and, though their number is small compared with the total population, it is probable (according to the chief medical officer) that small-pox, if it appeared, could be kept under control. Typhoid is unknown. Bronchial and lung troubles, especially whooping-cough, probably introduced by white men, cause some mortality among the natives. Parasitic intestinal worms seem to affect 50 to 80 per cent. of the native population. Their general effect on health is not yet ascertained.

(5) RACE AND LANGUAGE

The natives are Papuans with much Melanesian admixture. The Papuans are the aborigines, and may possibly be related to the natives of Australia. The Melanesians are supposed to have entered New Guinea on the north-east from the Bismarck Archipelago, and to have spread along the east and south coasts, in some places penetrating inland. There is the same mingling of races in the islands, except in Rossel Island, the inhabitants of which seem to be pure Papuans.

There are numerous Papuan and Melanesian languages and dialects. The Papuan languages differ widely from one another and from the Melanesian languages; the Melanesian dialects are closely related to one another. A knowledge of English is being spread, especially in the islands, by means of the mission schools and planters, but the only *lingua franca* at present is *bêche-de-mer* English, and that is little understood away from the coast.

Most of the natives are of fine physique, but people of small stature are occasionally met with in the interior. Some of the inhabitants of the deltaic region of the Fly River are of poor physique. In the south-east and in the islands the people are small but well-proportioned.

The various tribes are normally in a state of war with one another; but European influence has introduced peaceful conditions in many parts. On the mainland Government influence has penetrated to the interior, chiefly along certain river valleys; but many tribes are quite free from control. The islanders, except in some parts of the D'Entrecasteaux group and in Rossel Island, are peaceful; the Rossel Islanders still have a bad name. The inhabitants of Sudest Island are said to be the most civilized and peaceful in the whole territory. Beyond the sphere of Government influence no part of Papua can be regarded as safe. Head-hunting and cannibalism are still practised in parts. The natives are superstitious, and it is easy to offend their susceptibilities. Most natives are armed: those in the gulf region with bow and arrow; those of the south-east and islands with spears and clubs.

(6) POPULATION[1]

Numbers

The native population is estimated to number 250,000 to 350,000. Only in a few small districts has there been a census. The Trobriand Islands have a population of 8,500, included in the above estimate. Population is densest round the coasts and on the islands. West of the Fly River it is sparse; but parts of the interior are well populated. Very few of the islands, even the smallest, are uninhabited. Large villages are the rule everywhere on the mainland and in the islands.

The alien coloured population in 1916 included 351 South Sea Islanders, mainly Samoan mission teachers, 8 Japanese, and 3 Chinese.

The white population in June 1916 was 992, compared with 1,037 in the previous year, the decrease being entirely due to causes arising out of the war. The total included 105 Government officials, 115 planters, 108 miners (chiefly gold miners), and 75 missionaries.

Towns and Villages

Port Moresby, the capital of Papua, lies on the east shore of the gulf, and has a population of 700. Tanubada, on the coast, and Elavara, on an island, are two large native villages, adjacent to Port Moresby. The only other centre comparable with Port Moresby is Samarai Island, 250 miles to the east, where there is an important training settlement on the north-west of the island. Woodlark Island, on account of its gold-fields, is an important centre. Government and mission stations are scattered along the coast, but rarely inland. The most westerly Government station is on Daru Island, and the most northerly is at Ioma, at the confluence of the Tamata and Mambare Rivers, about 20 miles from the coast. In the Trobriand Islands, Losuia is the seat of the resident magistrate.

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[1] See foot-note, p. 26.

Movement

In the few districts for which it is possible to get accurate figures, the population seems to be increasing. Thus, in the Trobriand district in 1915, the birth rate was 51·2 per 1,000, and the death rate 46·7 per 1,000. Investigations in certain villages in the central district also show a slight increase. These are not sufficient figures, however, to admit of any general conclusions. According to the present Governor the population of that part of the territory which is under control is "certainly not diminishing, though the increase, if any, is probably very small."

II. POLITICAL HISTORY

Chronological Summary

1511	Portuguese discover New Guinea.
1700	Dampier discovers New Britain.
1768	Bougainville reaches south coast of New Guinea.
1770	Cook surveys Torres Strait.
1793	East India traders annex Manasuari Island, off north-west coast. D'Entrecasteaux explores south-east coast and neighbouring islands.
1828	Dutch take formal possession of west part of New Guinea.
1829	D'Urville surveys the south coast.
1846	Lieut. Yule takes possession of the south coast.
1853	France annexes New Caledonia.
1873	Capt. Moresby takes possession of the large islands east of the mainland.
1875	Government of New South Wales proposes annexation of East New Guinea and other Pacific islands.
1883	Government of Queensland annexes East New Guinea.
1884	British Protectorate proclaimed over the south-east coast. German Protectorate proclaimed over the north-east coast.
1885	Anglo-German agreement as to frontiers.
1888	Definite annexation of the Protectorate.
1895	Anglo-Dutch frontier defined.
1902	Authority of Governor of Queensland over Papua transferred to Governor-General of Commonwealth.
1905	Papua Act transfers New Guinea to Federal control.

(1) Discovery and Annexation

Discovery.—The island of New Guinea was known long before it was thought worth annexing. All the great colonizing nations discovered it in turn—the Portuguese in 1511, the Spaniards in 1528, and the Dutch in 1616. The first Englishman to visit it was William Dampier, who, in 1700, sailed along the northern shore and discovered and named the neighbouring island of New

Britain. The great voyages of French and English navigators into the Pacific in the later eighteenth century, when Bougainville reached the south coast of New Guinea (1768), and Cook surveyed Torres Strait (1770), brought New Guinea out of its obscurity, and raised the question of its settlement and annexation.[1]

Annexation.—In 1914 New Guinea was under the sovereignty of three Powers—the Netherlands, Great Britain, and Germany. The Dutch, basing their claims on a cession made by the Sultan of Tidore, took formal possession of the western half of the island in 1828, though their first attempts at settlement were not very successful. Great Britain maintained a continuous interest in New Guinea from the time of Cook's voyages, and on more than one occasion showed signs of an intention to make settlements on, or annex, some part of the island. In 1793, the East India traders, Kormuzin and Chesterfield, took possession of New Guinea and of islands in Torres Strait,[2] and again, in 1846, Lieutenant Yule took possession of the southern coast. Neither of these actions was confirmed by the Government; British interests did not at the time seem sufficient to justify the annexation of the island. The aspect of the matter was changed with the growth of the Australian colonies. As large European communities in the Pacific, they thought themselves entitled to a very important voice in determining the political future of the island groups that surrounded them and commanded their routes of communication. They looked on the Pacific as their field of expansion; and, when foreign merchant agents and foreign travellers began to penetrate the Pacific, they became apprehensive that foreign colonization would follow, and would have been glad to establish a Monroe doctrine against the intrusion of other Powers.

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[1] A sketch of the history of the discovery and exploration of New Guinea is given in a Memorandum by Captain F. J. Evans; Parliamentary Papers 1876, c. 1566, p. 21.

[2] Accounts and Papers, 1876, c. 1566, p. 1.

The difficulties to which the French convict station in New Caledonia gave rise emphasized in their minds the undesirability of foreign neighbours. National feeling, trade interests, the peace and order of the Pacific, the security of their shores, and their immunity from European wars were the principal motives that influenced them. Of all the islands New Guinea was the most important to Australia (as Samoa is to New Zealand) because of its nearness, its strategic position relatively to Australia, and its command of the Torres and China Straits. Enterprising spirits in Australia began to frame projects of colonization. In 1867 a Company was formed in Sydney to colonize non-Dutch New Guinea;[1] but the promoters abandoned their project when they found they could not form a colony without the consent of the Imperial Government. In 1870-71 a band of youths attempted a prospecting expedition to New Guinea, but met with shipwreck and disaster.

This attempt, foolhardy as it was, reflected the feeling of the country and drew attention to the island at a moment when other and different causes were doing the same. Merchant vessels had begun more and more to frequent Torres Strait; the *bêche-de-mer* and pearl fishers of Queensland had extended their operations to Louisiade in the east and Saibai in the north; missionaries were visiting the mainland, where in 1871 the London Missionary Society established a station at Daru, near the mouth of the Fly River; Russian, French, and Italian travellers were exploring on the coast; in the neighbouring islands the ill-regulated labour trade was giving rise to all sorts of abuses; and in the Bismarck Archipelago German business agents were pioneering in search of trade. Both those who wished to exploit and those who wished to protect the natives sought the ear of the Colonial Office. Then, in 1873, Captain Moresby discovered the harbour on the south to which he gave the name of

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[1] A. & P. 1876, c. 1566, p. 27.

Port Moresby, and provisionally annexed the larger islands off the extreme eastern point of the mainland.[1]

This action received no recognition, but was soon followed by a definite proposal from New South Wales. In 1875 the administration of Mr. John Robertson put forward an ambitious scheme of annexation,[2] including not only New Guinea, but the adjacent islands, the Solomons, the New Hebrides, and the Marshall, Gilbert, and Ellice Islands. They argued that the matter was one of Imperial, and not simply of Australian, importance. At the time such annexations would probably have aroused no feeling of antagonism among foreign Powers. Meanwhile, in England, a New Guinea Colonizing Association was pressing for recognition. The Home Government were not indifferent in the matter, and made enquiries as to the Dutch title to New Guinea and the boundaries of their possessions; but, taking the view that the prime interest in the matter was Australian and not Imperial, and that there was no reason to anticipate any action by other Powers, they declined the proposal for annexation.

Then it seemed that events would force their hand and that the immigration of adventurers to New Guinea, which the Colonial Government predicted, would necessitate the declaration of a protectorate; for, in 1877, gold was discovered, and soon afterwards a party of miners arrived at Port Moresby. For a time a Queensland agent, though without legal authority, maintained order. In the following year the Government extended the boundary of Queensland to include the whole of Torres Strait and the islands in it up to a short distance from New Guinea; and the station at Somerset, near Cape York, on the mainland, was moved to Thursday Island, from which the Strait could be controlled. But the gold rush soon ended in complete disappointment, and the gold seekers departed. The new argument for annexation thus fell to the ground, and in

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[1] J. Moresby, *Discoveries in New Guinea*, p. 208.

[2] A. & P. 1876, c. 1566, p. 26.

January 1883 Lord Derby stated definitely that the Government would not reopen the question.

In Australia, however, the event stimulated anew the feeling in favour of annexation, which was still further strengthened by fear of the intentions of Germany and Italy. In 1882-83 there were signs that Germany might be contemplating colonization in New Guinea,[1] and in April 1883 the Government of Queensland, apprehensive lest some foreign Power should take possession of the islands and coasts opposite to Cape York and the entrance to the waterway inside the Barrier Reef,[2] sent Mr. Chester, Police Magistrate at Thursday Island, with instructions to annex all non-Dutch New Guinea.[3] The action of Queensland was supported by the other Australian colonies; and the Home Government, confronted by this bold act of self-assertion, once more gave the matter careful consideration. Unwilling to increase imperial responsibilities and expenses, distrusting Queensland's attitude to the natives, and believing the danger of foreign annexation to be imaginary, they again refused to ratify a policy of annexation, but they subsequently offered to establish a coastal protectorate towards the expenses of which the colonies should contribute.[4]

At the Inter-Colonial Convention of 1883 the colonies approved the annexation of New Guinea, so that an agreement was quickly reached.[5] It was a question of the extent of the protectorate, and it appears that at the last meeting before the autumn recess the Cabinet had at one moment agreed to proclaim a protectorate over the whole of non-Dutch New Guinea,[6] or all save the stretch of northern coast between 141° and 145° east longitude. It was at this stage that the Government got its first definite inkling of the intentions of Germany. In

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[1] A. & P. 1883, c. 3617, pp. 118 and 130.

[2] A. & P. 1883, c. 3691, p. 13.

[3] For Mr. Chester's account, A. & P. 1883, c. 3691, p. 16.

[4] Lord Derby's despatch, July 11, A. & P. 1883, c. 3691, p. 22.

[5] A. & P. 1884, c. 3863, p. 142.

[6] E. Fitzmaurice, *Life of Lord Granville*, II, p. 271.

August 1884 the German Government expressed the view that, while Great Britain's interests were paramount on the southern shore, there was room for German colonization on the northern, and suggested a friendly conversation between the two Governments.[1] Meanwhile, Lord Derby, in continuation of his negotiations with the Colonial Governments, gave orders for the proclamation of a British protectorate over southern New Guinea from longitude 141° east to East Cape,[2] and was surprised to learn shortly afterwards that, without further conversation on the matter, the German Government was annexing the New Britain Islands and northern New Guinea from the Dutch boundary to Huon Gulf.[3] In the circumstances, after consultation with the Colonial Government, he extended the British protectorate over the remainder of the north-eastern coast and the adjoining islands. In November 1884 the British flag was hoisted at Port Moresby for the fifth time on the soil of New Guinea;[4] and in January 1885 the German protectorate was proclaimed in Kaiser Wilhelm's Haven. An Anglo-German agreement[5] as to the interior boundary was made in 1885, and the boundary fixed approximately along the watershed. This arrangement gave to Germany 67,000 square miles, and to Great Britain about 90,500.[6]

Such in general outline was the sequence of events. The news of German action caused "surprise and agitation" and "great disappointment" in Australia. For years the Australians had complained that the Home Government did not promote British interests in the Pacific with the same energy as the

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[1] A. & P. 1884-5, c. 4273, p. 4.

[2] A. & P. 1884-5, c. 4217, p. 49. Map of British Protectorate as first proclaimed.

[3] A. & P. 1884-5, c. 4273, p. 63.

[4] Chalmers, *Pioneering in New Guinea*, p. 119.

[5] A. & P. 1884-5, c. 4441, gives the Agreement.

[6] A fuller account of Lord Derby's negotiations about the Anglo-German boundary will be found in *German Colonization*, No. 42 of this Series.

Governments of France and Germany displayed on behalf of their subjects. Their strongest feeling was directed against the French criminal establishment, which caused the most immediate inconvenience. But, in the matter of New Guinea, they felt that political and commercial interests of great importance to the Empire and to themselves had been sacrificed, that their foresight had been in vain, that the Government had given in too easily to the demands of Germany, and that the whole business had been mismanaged. They did not allow sufficiently for the balancing of advantages, of gain here and loss there, which must take place in the policy of a world-wide empire. At the time Great Britain was a good deal troubled by events in Egypt, and, needing the goodwill of Germany there, was not in a strong position to resist her claims, however unexpected, elsewhere. British interests in North-East New Guinea were the price paid for "getting out of the way the bar to the Egyptian settlement."[1]

(2) THE PROTECTORATE

The Protected Territory of New Guinea, 1884-88

Some years elapsed before the Protectorate was converted into a crown colony; and during this time its affairs were entrusted to a Special Commissioner—an imperfect and provisional arrangement, since the commissioner, in the circumstances, could not be empowered to make laws binding on the subjects of foreign Powers. Other difficulties, too, confronted General Sir Peter Scratchley, the first Commissioner. Disagreement between the Colonial and Imperial Governments on the financial arrangements delayed his starting for the territory, and when he arrived he found that the abuses of the Queensland labour trade in 1883-84 had alienated the natives and rendered his preliminary inspection more troublesome. His short term of office was mainly devoted to a study of the conditions of the country with a view to recommending a scheme of administration, and was marked chiefly by the establishment of the seat of government at Port Moresby. Port Moresby was the one place where a permanent attempt at civilization had been made; it possessed, in addition, the advantages of a harbour, a central position with easy access to Cooktown, and a healthy climate. On Scratchley's death, in December 1885, the Hon. John Douglas was appointed Special Commissioner (February 1886), and held the office until, in September 1888, the Protectorate was formally annexed.

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[1] Gladstone to Granville (March 6, 1885) in Fitzmaurice, *Life of Lord Granville*, II, p. 431.

(3) THE CROWN COLONY

British New Guinea, 1888-1905

Under the new constitution the Administrator was appointed by the Crown, but was subject to the instructions of the Government of Queensland.[1] He was assisted by an Executive and a Legislative Council, and was instructed to protect the natives in their persons and lands, and to promote religion, education, and civilization amongst them. The cost of the administration up to £15,000 per annum was guaranteed by the three colonies: New South Wales, Victoria, and Queensland. Sir William Macgregor was appointed the first Administrator, and held office until September 1898. The title was changed to Lieutenant-Governor in March 1895.

In a country such as New Guinea, where there were only twenty Europeans when the protectorate was first proclaimed, the future depended primarily on the attitude of the natives and on the success of the

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[1] See A. & P. 1888, c. 5564, p. 651, for the particulars of the form of government.

Government in securing their confidence and furthering their moral and material progress. The chances were not unfavourable. New Guinea was relatively untouched by Western influences, and the Government could work out its policy in regard to such matters as land and labour, police and justice, education, and the relations of the races, deliberately and systematically, from the beginning, without the hampering effect of past mistakes. It was of the utmost importance, too, that Macgregor, who had gained experience under Sir Arthur Gordon in Fiji, had an uninterrupted period of ten years in which to attempt this. Proceeding with patience and tact, he established his authority in the coastal districts, organized the departments and the administration, and brought to the territory peace and order. His success is to be measured by the fact that the natives in general accepted the new arrangements quietly; and the murders of Europeans, which had been continuous since 1845, the vendetta, head-hunting, and cannibalism, common in the territory, virtually ceased as the authority of government was extended. For the maintenance of order he organized (1890) an armed native constabulary under European officers, and a system of village police. The latter acted under the local magistrates and served as a substitute for the tribal chiefs, who practically do not exist in Papua. These two forces have proved sufficient both for police and defence; for New Guinea has happily been free from any serious native rising. The Tugeri tribe, who were in the habit of raiding British territory from Dutch New Guinea, were checked by the constabulary in 1896; and with the Papuans themselves there was only once trouble, which arose in 1897 in the Mambare district near the German boundary. Externally, the most important political event was the final settlement in 1895 of the boundary with Dutch New Guinea.[1] The frontier was fixed 1½ miles east of the 141st east meridian, as far as the Fly River, which it follows between the two points where the river crosses the meridian, so that divided jurisdiction over the river might be avoided; it then follows the meridian to the point of intersection of the German, Dutch and British possessions.

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[1] A. & P. 1895, c. 7834, quoted in Appendix, Treaty II, p. 65.

The new conditions favoured the missionaries, who in general worked harmoniously with, and were helpful to, the Government. In Macgregor's opinion, they and the constabulary were the finest institutions in the country.

III. SOCIAL AND POLITICAL CONDITIONS

(1) RELIGIOUS

Before the coming of Christian missionaries none of the great historic religions appears to have penetrated Papua, where the religious beliefs of the various peoples have not passed beyond the stage of primitive mythology. In 1913 there were four missionary societies at work—the London Missionary Society, a Roman Catholic mission, an Anglican mission, and an Australian Methodist mission. The number of missionaries (adult males), not including native teachers from the South Sea islands, was 109, nearly one-eighth of the total (adult male) European population. The four societies have had marked out for them separate spheres of activity, to which they loyally confine their efforts; and they have been one of the chief influences in introducing Western civilization into Papua.

In all dealings with the natives the missionaries have played an important part. Before the advent of any form of Government they were the pioneers of European influence and authority. Part of their energy has been wasted through want of proper training and understanding of native ideas; but much of their work has been of great value. Scholastic and technical education, so far as it exists, is in their hands; and, though to-day the growth of Government influence is modifying their benevolent autocracy, their activities remain one of the main factors in the development of the territory.

What the total effect on the native mind has been one cannot tell. But Dr. Haddon has recently drawn attention to the rise of several new religious cults in Papua, and he connects this intellectual and emotional activity with the disruption of the older social order that is going on, and regards it as to some extent a reaction against the incoming European and a sign of receptivity of new ideas.[1]

(2) POLITICAL

The formation of the Commonwealth led to further changes in the government of the territory. In March 1902 the general superintendence of the administration was transferred from the Governor of Queensland to the Governor-General of Australia; and by the Papua Act,[2] 1905, British New Guinea became, as the Territory of Papua, a possession, though not a part, of the Commonwealth, which had henceforth the undivided control of its affairs. The Act places the administration in the hands of a Lieutenant-Governor, holding office at the pleasure of the Governor-General, and assisted by an Executive Council of not more than six officials appointed by the Governor-General, and a Legislative Council composed of the Executive Council and three non-official members appointed by the Governor-General. The non-official members vacate their seats after six years, but may be reappointed, and their number is to be increased with the growth of the European population. The Legislative Council has full powers of legislation subject to the Governor-General's veto within six months; but ordinances relating to divorce, Crown lands, native lands, native labour, the supply of arms, liquor, and opium to natives, and the immigration of aboriginal natives of Australia, Africa, Asia, and the Pacific Islands are reserved for the Governor-General's pleasure. The Act provides for appeals from the Central Court of the territory to the High Court of Australia.

For the purposes of administration the territory is divided into ten districts, each under the charge of a resident magistrate. The greater part of the revenue is derived from the Customs receipts and an annual grant by the Commonwealth, the amount of which was at first £20,000, but which has been since increased to £30,000.

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[1] *Hibbert Journal*, April 1917, *Five New Religious Cults in New Guinea*, by E. W. P. Chinnery and A. C. Haddon.

[2] *Handbook of Papua*, 3rd edn., 1912, p. 112.

(3) PUBLIC EDUCATION

There are two small Government schools for European children at Port Moresby and Woodlark Island respectively. The education of the natives is in the hands of the missions, which at many stations have large and flourishing schools. In some of the mission schools English is taught, and in such cases the attendance of the native children is compulsory. The educational work of the missions is generally well spoken of in the reports of the divisional magistrates. The missions have also some schools for European children.

(4) SOCIAL

Progress of Natives.—It is too soon to attempt to measure the influence upon the natives of the changes that have taken place, or to judge of their possible future progress. It is clear that the Government has not attempted in any direct way to europeanize them, or to alter their moral and religious outlook, unless it be by the suppression of sorcery, a baleful influence on their life, against which it has always fought; and it has certainly protected them from much of the pressure of Western life, to which they would otherwise have been exposed. The slow extension of its authority has meant primarily the surer suppression of crime and the obligations of peace and law and order, which the natives appear to have accepted quietly and not ungratefully. This speaks to tactful handling and to the possibility of good relations between the races, on which the economic development of the territory depends. Apart from this, mission teaching and the experience of Government service and plantation employment seem to be the chief influences which the new conditions have brought to bear on native life. Experience seems to show that the natives can profit by the European training and discipline which they get in the constabulary and other Government services. These are also, it may be observed, a means of spreading over the territory the Motuan language of the natives of Port Moresby. The natives make good labourers, and can be taught to be artisans; but the process of persuading them to cultivate habits of industry and to abandon their old warlike activities and leisurely life must be gradual, and they will only slowly be drawn into a higher economic organization.

IV. ECONOMIC CONDITIONS[1]

(A) MEANS OF COMMUNICATION

(1) INTERNAL

(a) *Roads and Tracks*

The natural features of Papua are in a marked degree inimical to communication by land, and "the difficulties of inland travel . . . . can hardly be realized by those who do not know them."[2] Tropical forest and jungle, penetrable only at the rate at which a man can hack his way through the interlaced growths; extensive swamps, full of thorned bushes and "lawyer cane," where the water is often over a man's head; rivers, streams, and mountain torrents, seldom spanned by bridges; in the west, plains half submerged in the wet season, and parched and waterless in the dry; in the centre and east, a mountainous country, seamed with deep gorges, and bristling with precipitous, razor-backed hills; such are some of the obstacles to locomotion. To provide facilities for communication and transport in such a country is a laborious and costly process, and scanty progress has so far been made with it. Special grants have, however, been allocated to public works since the territory passed under Commonwealth control, and an effort has been made by the Government, sometimes with the aid of private companies and individuals, to keep road construction in some sort of relation to mineral and agricultural development. Nevertheless, the only roads in the European sense of the term which the territory possesses are the road which connects Port Moresby with the Astrolabe copper-field district, a total distance of some 50 miles, and the road from the coast to the Kemp-Welch river. Occasional roads for vehicular traffic have been made in connection with plantations; there is a cart road three miles in length in the mining area on Woodlark Island; in the Trobriand Islands, in the neighbourhood of Losuia, there are about 60 miles of improved track, some of which is "a good buggy road . . . . from 15 to 25 feet wide . . . . with an excellent cycling surface"; and on parts of the Buna-Yodda track in the Kumusi Division a bicycle could be used under favourable weather conditions. About 600 miles of track in the central and east-central divisions are practicable for horses and mules, and rather over 100 miles in the Eastern Division.

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[1] Papua is not yet entirely explored, and of the portion which is known much still awaits complete and scientific description.

[2] Annual Report, 1914-15. The latest Annual Report on Papua accessible when this Handbook was prepared was that for 1915-16. The figures throughout should therefore be compared with those in the Report for 1916-17, published by the Government of the Commonwealth of Australia in 1918.

Beyond these limits communication is by Government or native track, the former usually consisting of a primitive path, and the latter sometimes being invisible to the European eye. These tracks the natives are required by the Government to keep clear, each village being responsible for the portion passing through its boundaries, and the duty is performed with tolerable efficiency within the sphere of Government influence. That it is not a light duty is due to the prodigious vigour of tropical vegetation: in the rainy season even grass will grow with astonishing rapidity to a height of 7 or 8 feet. The maintenance of roads and tracks is, indeed, a problem inferior in difficulty only to their construction, for rivers in flood often do much damage to bridges and their approaches, and in the swamps the constant moisture rots the piles on which the roads and tracks are carried. Noxious insects and reptiles, and, at first, in the less accessible regions, treacherous natives, add to the difficulties of travel and transport.

(b) *Rivers*

What the land lacks in facilities for communication the rivers supply only in part. The country has been generously, even lavishly, endowed with rivers; there are some 25 streams which are more or less navigable; and in proportion to its size Papua is one of the best-watered countries in the world. But the rivers have drawbacks as means of communication. Nearly all have bars across their mouths, with little water over them at the highest tide. Some, in the west, where the breakers roll in over the shallow shore, are difficult or impossible of access, especially during the south-easterly season. Up a few of them there runs a bore dangerous to boats. Many have strong currents, with perilous rapids. Nearly all are subject to frequent and violent changes and disturbances resulting from the nature of a mountainous country in the tropics, and considerable rises or falls in a few hours are not uncommon. Further, the rivers best fitted for navigation flow through districts which are at present of little commercial value. The Fly, which is navigable for 535 miles by steam launch and for over 600 miles by boat; the Morehead and the Purari, which are navigable for 120 miles; the Oriomo, Bamu, and Kikori, navigable for 40 miles; the Pahotiuri and Turama, navigable for distances not yet ascertained—all these rivers traverse country the development of which is at best a vision of the distant future. The Angabunga, Bioto, and Vanapa are swift-flowing streams, with few possibilities beyond the transport of timber.

The rivers which offer commercial advantages are thus reduced to six in number. The Vailala, which serves a district rich in promise with its oil, its timber, and its rich, alluvial land, is a magnificent river with a good depth of water, and is navigable for 80 miles by light-draught vessels; but the channel over its bar is a shifting one, and the bar is dangerous for boats during the south-east season. The Lakekamu is navigable for 90 miles, and could be rendered navigable for a greater distance. In the Laloki, which, with its tributaries, the Goldie and the Brown, serves a fertile district where development has already begun, there is a good depth of water for vessels of moderate draught, but the river is not wide enough, at all events in its upper reaches, to permit a boat over 100 feet in length to turn. The Musa is 100 yards broad and two or three fathoms deep at 36 miles from its mouth, and is navigable for many miles by boat. The Kumusi, navigable for 55 miles by steam launch, is wide in the lower reaches, but with varying depths, and the bar is very shallow; near the upper reaches are fine alluvial plateaux, covered by forest, which promise great agricultural wealth. The Mambare, navigable for 40 miles by launch, has on its upper reaches alluvial flats suitable for agriculture; and at all seasons launches can reach Tamata, the depot for the Gira gold-field.

(*c*) *Transport*

Transport consists of carts, horses, and mules, where the use of them is practicable, of native carriers, and of the available means of carriage by water, such as the steamers of shipping lines, the luggers and cutters which trade along the coast, fishing and pearling boats, Government and mission vessels and launches, and, in the rivers, launches, boats, canoes, and rafts. Mules, which can readily be fed on plantation produce, are found to be an economical means of transport, the extended use of which seems likely to provide a partial solution of the problem of carriage. The native carrier is liable to attacks of sickness, home-sickness, and indolence; he may desert, or shirk, or sulk; but, taken at his best, he is a remarkable beast of burden. Two men will sling a load of from 50 to 70 lbs. on a pole resting on their shoulders; the single carrier will strap a burden of 35 or 45 lbs. on his back; and thus laden they will do a long day's march through swamp and jungle, over nearly inaccessible mountains, and up and down precipitous hills, where the unencumbered European runs some risk of a fatal slip. One of the few things the native carrier cannot do is to carry burdens barefooted over proper roads. Water transport, so far as it proceeds by river, is limited by the capacity of the available river craft. So far as it proceeds by sea, it is limited by the opportunities that offer in the shape of vessels proceeding in the right direction and possessing the requisite space, so that a man or a cargo may wait for a considerable time for an opportunity of shipment.

The transport problem is, indeed, a governing factor in the economic development of the country. The export of sandalwood has almost ceased, because the coastal regions are worked out. Some of the richest agricultural land lies fallow, because it is remote from civilization and difficult of access. Great tracts of valuable timber are practically untouched, because they are distant from a river, or because the felled trunks cannot be hauled to its banks, or because, when floated down, they cannot be shipped. Before the Vailala petroleum field can become commercially profitable, the problem of handling the oil will have to be solved. Transport difficulties have also been the bane of some of the inland gold-fields; machinery cannot be carried to them over 70 miles of track practicable only for the native carrier; and the price of bare necessities so carried has become well-nigh prohibitive. Even on the Astrolabe copper-field, which is comparatively close to Port Moresby, it does not pay to work any but the richest ore, because with ordinary ores carriage by pack mule to the wharf absorbs the prospective profit.

(*d*) *Proposed Railway*

The postponement, by reason of the war, of the construction of an already surveyed railway to Sapphire Creek, and of the erection of improved wharf[1] accommodation at Port Moresby, is a grave misfortune for the Astrolabe copper-field and a disappointment to the adjoining agricultural districts, as it would have been of material assistance to the development of both. This line was to have started on Ela Beach, with a branch connection to the projected new wharf, and to have terminated at Sapphire Creek, at a point near the township of Rouna. It would have followed in the main the direction of the existing road, with some necessary deviations to obtain a suitable gradient. The maximum gradient laid down was 1 in 40, and the minimum radius for curves 2½ chains; and under these conditions suitable engines should have experienced no difficulty in drawing loads of about 100 tons at a fair average rate of speed.

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[1] The new wharf was begun in 1916. In 1917 the length completed was 777 feet.

(*e*) *Posts, Telegraphs, and Telephones*

Post and Money Order Offices are to be found at the Government Stations in the several Divisions, but the maintenance of connection between them is difficult. A regular and fairly frequent service is maintained by mail steamers between the chief centres, such as Port Moresby, Samarai, and Woodlark Island, and a small vessel, subsidized by the Commonwealth Government, makes monthly journeys round the coasts and islands, calling at the chief places of settlement, whence the mail is distributed as occasion serves. Government, mission, and private vessels supplement the subsidized service. The Mambare Division has a fortnightly service overland by Kokoda, the mail being carried by armed police, who travel night and day, and do the journey in about eleven days. From the commercial point of view the postal service must be regarded as infrequent, irregular, and unsatisfactory.[1]

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[1] A seaplane service for the delivery of letters and telegrams would, perhaps, form a method of communication as cheap, as expeditious, and generally as suitable to the conditions of the country as any that could be devised. All points of settlement on the sea coasts and river banks—and there are few others—could be reached by seaplane; and the seaplane could always come down in safety on the rivers when surf on the bars or rollers in the bays rendered them inaccessible to vessels. It is true that a seaplane

Port Moresby has a telephone service, which has now been extended to some of the nearer plantations, and the rudiments of a telephone service, at present confined to Government offices, exist on Woodlark Island.

(2) External

The ocean communications of the country do not present so many drawbacks as the internal ones. Within the Barrier Reef, which protects part of the southern shores of New Guinea, is a great waterway, where navigation is comparatively simple. Elsewhere, however, navigation presents some difficulties. The definition of coastal reefs and harbour entrances by beacons, buoys, and lights is inadequate; off the eastern coast the lead seldom gives any warning of danger; and either the dark colour of the coral misleads as to depths, or, as in the Gulf of Papua and to the west, where navigation is chiefly dependent on the lead, and sandbanks and foul ground run far out from land, the sea is discoloured by the many rivers which flow into it. The winds are of the monsoon type, blowing alternately from the south-east during the period from April or May to October or November, and from the north-west for the rest of the year. Though the wind may attain to hurricane strength at certain seasons, cyclonic storms are unknown. During heavy gales strong currents are encountered, especially off the south-east coast and among the islands. Natural harbours and anchorages are fairly numerous, except in the Gulf and the west.

(*a*) *Ports*

There are four "ports of entry"—Port Moresby, Samarai, Bonagai, and Daru.

Of these Port Moresby alone can be reckoned as a port in the ordinary sense of the term. It is a spacious

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service might suffer occasional interruption by high winds; but at its worst it should be less slow and irregular than the present system, whilst at its best it would be incomparably superior.

indentation with a water frontage of about 19 miles, protected by a reef and islands; and, though strong winds throw a sea into it, there is in the eastern bay a sheltered anchorage for all classes of vessel in 6 to 8 fathoms, whilst Fairfax Harbour, its north-western portion, provides a secure though unhealthy anchorage, tranquil during the heaviest gales, for vessels of moderate draught. Spring tides rise 9 feet, neap tides about 6 feet. The old Government wharf is 638 feet long; the first section (148 feet) is of stone, and the last section (60 feet) forms an L-shaped elbow. At dead low tide the depth of water at the extremity is 24 feet, decreasing to 12 feet at a point some 220 feet further in. There are truck roads to facilitate the handling of cargo. Another pier, privately owned, is about 260 feet long, with a rail for trucks; and there is a Government jetty 168 feet in length, built for the use of small craft and boats. The present wharf accommodation is not inadequate, but it is apt to be severely taxed, and could not meet the demands of any substantial development. A considerable sum was allocated for wharf improvement in the year 1914-1915, and new wharf construction, capable of berthing steamers up to 25 feet draught, and possessing railway connections, formed part of the projected railway scheme (see above, p. 30). Small quantities of coal are stocked here and at Samarai. The nearest dock accommodation is in Australia.

Samarai is a roadstead of limited extent. The anchorage has an uneven bottom of sand and coral, causing not infrequent difficulties in the recovery of anchors. Spring tides rise 6 feet, neap tides $3\frac{3}{4}$. The tide runs with a maximum velocity of from 3 to 4 knots, and there is scarcely any slack water. There is a privately owned pier 52 feet in length, with a depth of 25 feet at its extremity at low water.

Daru Island—where the roads have an anchorage in from 4 to 7 fathoms—and Bonagai, on Woodlark Island, are anchorages with Government jetties.

Government jetties also exist at Kikori, Kerema

Bay, Abau, Baniara, Cape Nelson, Buna Bay, and Losuia in the Trobriand Islands. At Baniara there is a good anchorage, and a wharf 40 feet long, which has a stone tail, terminating in a decked T-piece, with depths of 22 feet at high water and 16 feet at low. Buna Bay possesses a substantial wharf 120 feet long, which allows of a vessel of 300 tons tying up alongside.

Anchorages are fairly numerous round the coast and among the islands, though scarcer in the Gulf and to the west. Port Romilly, the mouth of the River Kapaina, at the head of the Gulf of Papua, is a good roomy anchorage available for vessels of 12 feet draught in the south-east trades and of 17 feet draught at other seasons. It is, however, inadequately surveyed. Other inlets in the neighbourhood offer fairly good accommodation. Mention may also be made of Hall Sound, McFarlane Harbour, Millport Harbour, and Port Glasgow. Mullens Harbour, though partly obstructed by sandbanks, is said to afford sheltered anchorage. All these lie between Port Romilly and South Cape.

No modern tonnage statistics are available for the several ports, and recent trade returns are incomplete. It is reasonably clear, however, that Samarai no longer holds the unquestioned supremacy as a commercial centre which it once enjoyed.

In the period 1894-1907 72 per cent. of the total trade of the territory passed through Samarai, and only 24 per cent. through Port Moresby.[1] For the period 1913-1915 Port Moresby took 47 per cent. of the total trade, and Samarai only 36 per cent. The decline in the relative importance of Samarai is attributable to several causes. In the earlier period this port, by reason of its geographical situation in relation to trade routes and to the islands and coasts of the mainland, acted as a distributing depot for the existing centres of mining, fishing, and agricultural activity. It has now lost part of its trade to the new port of entry at Bonagai, which serves a mining area and by 1913-1915 was already handling 14 per cent. of the total trade. Samarai has also suffered from the declining importance of the wild products of the country without gaining proportionately by the expansion of its cultivated resources, or by the growing needs of the districts where those resources are being developed. Further, Port Moresby can offer greater facilities for shipping, is a centre of distribution to mining and agricultural districts of growing importance, and tends generally to assert its consequence as a capital. Daru is, and in the absence of agricultural development in the west seems likely to remain, dependent on small vessels engaged in the fishing industry and in local trade. Its trade in 1913-1915 amounted to only 2 per cent. of the whole.

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[1] On the average of the years 1901 to 1904 93 foreign-going vessels, of 35,659 tons, and 701 coast-wise vessels, of 22,347 tons, were entered and cleared annually at Samarai, as against 48 foreign-going vessels, of 27,950 tons, and 190 coast-wise vessels, of 4,823 tons, at Port Moresby.

In the period 1904-1912 2,188 vessels of 1,566,915 tons were entered and cleared at the ports of the territory, the percentages being: British, number, 88 per cent., tonnage, 55 per cent.; German, number, 6 per cent., tonnage, 27 per cent.; and Dutch, number, 6 per cent., tonnage, 18 per cent. In the period 1912-1916 3,563 vessels of 1,275,497 tons were recorded; the percentages were: British, number, 94 per cent., tonnage, 55 per cent.; foreign, number, 6 per cent., tonnage, 45 per cent.

(b) *Shipping Lines*

The war has restricted shipping in Papuan waters, but normally the position is as follows: Messrs. Burns, Philp & Co., Ltd., run a three-weekly steam service by vessels of 1,600 to 2,000 tons, under subsidy from the Commonwealth Government for the carriage of mails, from Australian ports to Port Moresby, Samarai, and Bonagai, returning by the same route, and calling at Yule Island on alternate trips. In connection with the same Company's Sydney to Singapore service their ss. *Misima*, of 300 tons, ran monthly round the coasts of the mainland and the islands; it was wrecked in February, 1917. The Royal Dutch Packet Steam Navigation Co. have a monthly service from Australian ports *via* Port Moresby and Thursday Island to Java, returning the same way. The Norddeutscher Lloyd steamers from Sydney for Hongkong *via* Friedrich Wilhelm Hafen used to call at Port Moresby, Samarai, and Bonagai, if sufficient inducement offered.

In addition to the vessels of the regular shipping lines, the casual tramp steamer is to be met with, but it is an infrequent visitor. Apart, therefore, from Port Moresby, which alone has direct communication with Australia and Asia by vessels of any considerable tonnage, Papuan ports offer few or no freight facilities by ocean-going vessels; and in the absence of an improved service a company engaged in large commercial operations would find it advantageous, if not actually necessary, to run cargo boats of its own. It would seem that commercial development requires an improved shipping service, but that, in the absence of State intervention, an improved shipping service could be created only by commercial development.

(*c*) *Wireless Communication*

A radio-telegraph station, of 7 kilowatts power, is established at Port Moresby, with ranges of 500 miles by day and up to 1,500 miles at night. Regular communication is kept up with Thursday Island, Cooktown, and Townsville, and communication is possible under favourable conditions with Brisbane and Sydney, German New Guinea, Java, and Timor. A land telegraph line connects the station with the Port Moresby Post Office. The rate of charge is 2*d*. a word between Papua and Thursday Island, with additions for land and cable charges to the office of destination. There is now also a wireless telegraph station on Woodlark Island.

(B) INDUSTRY

(1) LABOUR

Although the apprehended scarcity of native labour which haunted the pioneers of Papuan industries has never yet been seriously felt, nevertheless the question of the adequacy of future supplies in the event of substantial economic development is of paramount importance. Climatic conditions preclude prolonged manual labour by the white man, and the importation of coloured labour is prohibited. The rights of the Papuan in the disposal of his labour, as of his land, are jealously safeguarded, and the Native Labour Ordinances impose stringent conditions as to recruitment, pay, housing, rations, &c. Opinions differ profoundly as to the respective merits of "boys" from different localities, the inference being that there is not much to choose between them, and that results depend, not so much upon the material, as upon the way in which it is handled. The native is usually of good physique, light of heart, and amenable to discipline; and apart from statutory requirements the employer takes care to be on good terms with his boys, since news travels mysteriously fast and far through Papuan villages, and a bad reputation is a serious obstacle to securing labour supplies. An agriculturist, by instinct and necessity, the Papuan is a fair plantation hand, and, if he does not yet compare very favourably with Chinese or Javanese labourers, it must be remembered that he has not been trained for generations in skilled work. He is a splendid carrier and an excellent boatman, and he has also done fair work on the gold-fields.

The future supply of indentured native labour depends upon the size of the population and its response to recruiting appeals. The population is variously estimated at from 200,000 to 350,000 souls. At one time it was generally believed to be declining under the adverse influences of frequent famine and incessant inter-tribal war, but in the settled districts, where records have lately been kept, it has of late been increasing. Not more than a quarter of the population is composed of able-bodied men; of these enough must be left to hunt, fish, and cultivate gardens; and it is thought that not more than 10 per cent. of the total population could continuously indenture without detriment to the social life of the villages and the continuity of the race. There is thus an available maximum of from 20,000 to 60,000 men on the basis of the existing population. This is an insufficient supply for the development of the country, except by very slow degrees, and the policy which prohibits the importation of labour may some day have to be reconsidered. The immigration restrictions resemble those which proceed from the "White Australia" doctrine, but they are prompted by different motives; and the policy which underlies the restrictions might best be described as "Papua for the Papuans." The Government, which in enforcing peace has deprived the native of his main interest in life, is bound to supply him with another motive for existence, and this motive must be an industrial ideal; but no such ideal could be attained if the uneducated Papuan were exposed to the unrestricted competition of trained Eastern labour. Legislation now holds an even balance between the needs of development and the interests of the native; but when the Papuan is imbued with the industrial ideal, and is employed up to the limit of his economic capacity, different considerations will seemingly apply; for then, so far as can be seen, the maintenance of existing restrictions would frustrate development without promoting the welfare of the native.

For the present there is no likelihood that any shortage will be felt. The figures of indentured labour (see Table VI) have never yet touched 10,000; recruiting methods become more effective; and the native, though peace makes him lazy, and the stimulus of individual interest is largely destroyed by the communistic system in force in the villages, is yet becoming accustomed to earning money and obtaining what money can buy, and is coming to regard labour for Europeans as a normal feature of his existence. Compulsory coconut-planting, track clearing, and carrying for Government officials also have some effect in familiarizing him with the idea of labour; and it is reported that a hut tax is to be imposed, which is calculated to produce the same effect.

There is, however, even now a danger of partial or local failures in supply. The native is master of the situation, and can choose his locality and his occupation. Thus, being by nature an agriculturist, he has never taken kindly to work on the mineral fields; and an extension of mining activities might encounter a deficiency in the supply of miners' boys. He discriminates also between different regions: recurrent epidemics of dysentery, for instance, have depressed the Port Moresby district in native favour. He is also free to pick and choose among employers, and makes his decision for reasons which are often obscure. Should occasion arise, he might exercise discrimination on a basis of nationality, and in this connection it is noteworthy that the German has not achieved popularity in Papua. The Lieutenant-Governor reported at the outbreak of war that a German landing was commonly regarded as an event of much more dire import than an ordinary cannibal raid. "There were certainly no pro-Germans among the natives," he stated;[1] adding that "there seemed to be absolute unanimity among them that the Germans were, as they expressed it, 'no . . . . . . good.' "

(2) AGRICULTURE

Of the industries of the country, agriculture, fisheries, and mining, the first is rapidly becoming the most important, and, subject to the unknown possibilities of petroleum (see p. 52), it is to agriculture that Papua looks for her future development. Agricultural land may be had at any altitude from sea-level to 12,000 feet and under very various conditions as regards temperature and rainfall: on the Kemp-Welch River in 1911-1912, for instance, only 30 inches of rain were recorded, and at Port Moresby in 1914-1915 only 26; whereas the fall on the Lakekamu field in 1912-1913 amounted to 272 inches. Unlike Australia, Papua is rarely subject to prolonged droughts; and, unlike many South Sea islands, it is immune from cyclonic storms. Insect pests are rare. Streams abound, and possess the advantage, unusual in the tropics, of furnishing a pure and fresh supply of water. The luxuriant growth of vegetation, which is a curse in relation to communications, is, except as regards weeds, a blessing in relation to agriculture. Almost every tropical plant, and many European ones, will grow, even under adverse conditions of cultivation; most will thrive with reasonable care; and they reach productivity with unusual speed. A salient feature of Papuan agriculture is the preponderance of long-lived economic trees over annual crops, the value of which depends on the unstable and often incalculable conditions of the markets: hemp, tobacco, and cotton are grown in the dry belt near Port Moresby, but coconuts and rubber are the mainstay of the plantation industry. No plantation failures have been recorded so far, and experience seems to the Lieutenant-Governor to justify the boast that "there is no longer any doubt as to Papuan agriculture; . . . . its success is already considered as assured"; and, although the total volume of agricultural exports is still negligible, "there is, I think, among those who . . . . know Papua, a feeling amounting almost to certitude that, with reasonably good management, the plantations will pay, and pay well."[1]

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[1] Annual Report, 1914-15.

It is, indeed, impossible to study the Annual Reports without forming a conviction that the territory possesses many thousands of acres of agricultural land as fertile as any in the tropics, much of it in regions of reasonable accessibility. There are immense flats of alluvial soil, suitable for the cultivation of coconuts, rubber, and sugar; in higher altitudes there are lands admirably fitted for coffee and tea; and almost all tropical products can be grown in one part of the country or another. Sugar cane is indigenous in many varieties; and it has been officially declared that the sugar lands "cannot be equalled or excelled in Queensland or Fiji." The cane grows splendidly in native gardens; and with the construction of tramways and mills a profitable industry might be set on foot. Coffee and cocoa are both consumed in large quantities in Australia; and, if a preference were given to Papua, she could supply the greater part of the Australian demand. Even in the despised districts of the west good agricultural lands are to be found; vast industries might be established there in the cultivation of rice and the manufacture of sago; and one administrator thought it safe to predict that the western flats would become "one of the richest producing areas on the world's surface." It has been estimated that the present volume of export trade will be quadrupled by the produce of existing plantations alone.

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[1] Annual Report, 1914-15.

(*a*) *Products of Commercial Value*

Copra.—Coconuts, "the consols of the tropics," will grow in most parts of the territory, but they thrive best on the rivers and coasts, and the eastern and western portions of the southern coast-line perhaps contain the choicest coconut land. The palm is attractive and reliable for planters, but a certain amount of care in planting is required; and the palms take time to come into full bearing, even in Papua, where, however, they will produce nuts in four years or even less, and, in favourable circumstances, will bear a crop fit for copra-making in five years. But, once

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[1] Annual Report, 1911.

well-chosen trees are planted, their ultimate success is virtually assured; no skilled labour or expensive machinery is necessary for keeping the ground cleared, gathering the crop, and preparing it for sale; and there is always a ready market for the produce in Australia and elsewhere. It has been authoritatively estimated that a copra plantation of 500 acres should cost £4,000 to clear and plant, and £5,750 to maintain to the end of the sixth year, and that from the eighth year it should yield 250 tons of copra, in which event, with copra at £20 a ton, the plantation would, after the ninth year, pay 100 per cent. on the original capital invested.

Native palms are numerous. "The coconut," it has been said, "is all in all to the Papuan, gives him food and drink with its fruit, yields him wood for house and canoe, covers his roof with its leaves, clothes him with its bark, and with its leaf-fibres provides a sieve." Realizing its importance, especially as an article of food, and with a view also to the encouragement of an easily grown and marketable commodity, Sir William Macgregor in 1894 issued a regulation requiring the planting of coconuts by natives. The regulation has not been easy to enforce even within the limits of Government influence, and outside them it has been a dead letter. But as Government control has spread to new districts, and become more effective within the old ones, so compulsory coconut planting has progressed. Incomplete returns show that more than a quarter of a million nuts were planted by natives during the years 1913-1916. In the western division an elaborate co-operative scheme has been instituted by the resident magistrate, and it is certain that at least 350,000 palms in all have been planted under the requirements of Sir William Macgregor's ordinance. This means that in addition to plantation nuts there is scattered over the territory the equivalent of some 7,000 acres of coconuts, capable at maturity of an annual yield of from 3,000 to 3,500 tons of copra.

As plantation figures give 34,000 acres of nuts, it follows that in all over 40,000 acres of palms are now progressing towards maturity, and this acreage should give an annual yield of 20,000 tons of copra. Present exports vary between 800 and 1,200 tons, the bulk of which is derived from native trading, and is independent alike of plantation trees and of those planted under Sir William Macgregor's regulation. It would seem not unduly optimistic to suppose that the next few years should see an addition to the copra exports of approximately double the value of the entire export trade of to-day.

Rubber.—Rubber is indigenous to Papua, and the yield of native trees, crudely gathered, has been favourably reported on in London. Planters, however, prefer to cultivate the Para (*Hevea brasiliensis*) or Ceara (*Manihot Glaziovii*) varieties. The soil requisite for the rubber tree is superior to that needed for the coconut, and the tree is less independent of climate. It has been tried without success in the Western Division, and the Ceara variety has been grubbed up to make way for coconuts on plantations in the east of the Central Division, where it has proved a failure by reason of unsuitable rainfall, destructive winds, or disease. The best rubber land is, perhaps, to be found in the Sogeri district, but the plant grows well in other places, and it is believed that there are thousands of acres in the territory where it could be cultivated under favourable conditions. A difficulty with regard to Para rubber is, in the opinion of experts, "the undoubted eccentricity of yield which is a feature of the tree in alien lands." In Papua, however, its growth and vigour are above the average, and the present results of tapping point to a good record alike in the quality and in the quantity of the yield. Para rubber of Papuan growth has been certified to be equal to the best plantation rubber produced in the East, and to command the current prices of the highest grades. Like copra, rubber is a crop which involves the possession of capital by the planter, as the trees give no return for five or six years, and do not reach full productivity till they are ten years old. A difficulty was at one time anticipated with regard to the supply of trained labour for tapping, should any considerable expansion of the industry occur, but the apprehension seems to have been groundless, as Papuan labour for tapping is said to compare very favourably with that employed in the Malay Peninsula. Trustworthy authorities estimate the cost of a rubber plantation of 500 acres at £4,760 for the first year and at a total of £8,500 for the five succeeding years.

Existing plantations are young, and, as with copra, the exports of rubber have been derived in the past from native trading. The value of exported rubber has usually been under £1,000 a year, though it reached £2,000 in 1910-1911, and stood at £1,500 in 1913-1914 and 1914-1915. In 1915-1916, however, when the first plantation crops were harvested, the export significantly jumped to £14,846. At the present time 7,671 acres are under rubber, the annual yield of which should, at the most conservative estimate, approximate to 1,000,000 lbs., equal in value to one and a half times the entire export trade of the present time.

Hemp.—Sisal hemp likes a dry climate and a poorish soil, such as are found in the dry belt near Port Moresby, though it will apparently grow in Papua under varied conditions of soil and climate. It "grows like a weed," is not liable to injury by animals or diseases, costs little to produce, comes quickly to maturity, is easily handled and stored, and finds a ready market all over the world. A plantation of 500 acres should cost £10,225 up to the end of its sixth year, when it will reach maturity, and produce huge quantities of marketable fibre. In 1916 there were 4,812 acres under hemp. Papuan hemp has been certified to be clean, lustrous, and very strong, to compare very favourably with the product of East Africa, and to be saleable in large quantities in London, where it should fetch about £1 a ton less than the best Mexican hemp.

Apart from sisal hemp, the country is naturally rich in fibrous materials, and plants such as the *pandanus* are widely used by the natives in net-making. There are numerous varieties of bananas and plantains, and banana fibre should sell in large quantities.

Tobacco.—A very fine variety is domesticated, if not indigenous. The considerable local trade in twist tobacco for native consumption has led to experimental growing in Papua, and good pipe tobacco and cigar leaves have been produced. Two hundred acres were under this crop in 1916. Climatic difficulties have been encountered in the process of manufacture, the tobacco "moulding," as it did in Australia when first manufactured there; but the mould danger seems to have been scotched, the Government has granted a protective tariff, and the whole of the rapidly expanding output appears to find a willing market locally. The expansion of the industry may be gauged by the fact that excise dues imposed as from August 24, 1914, produced £6 in 1914-1915 and £906 in 1915-1916. There seems to be some doubt, however, whether the production of tobacco locally will be commercially profitable.

Cotton.—At least one kind of cotton is indigenous. That cotton-growing in Papua is commercially justifiable has been demonstrated during the last few years by the experience of several plantations, which have placed their products on the London market at fair or good prices. The upland sorts have been certified in Australia to be "up to the standard of the best American qualities," the samples appearing to show that Papua is eminently adapted to the production of cotton. Cotton will do well as a catch crop between lines of palms. Like tea and coffee, however, which have also been grown successfully on a small scale, the crop requires not only suitable soil and climate, but also expert management and an assurance that a large supply of suitable trained labour will be available at certain periods every year.

(*b*) *Plantation Statistics*

The acreage under plantation cultivation shows a rapid expansion (see Appendix, Tables I and II); it was 1,467 acres in 1907, 10,053 in 1910, and 47,506 in 1916. That the increase of the area under cultivation is accompanied by a decline in the area under lease (Table I) is due, not to any tendency to abandon agricultural enterprise, but to the forfeiture, for non-compliance with improvement conditions, of leases rashly or speculatively taken up under the generous terms formerly in force. It is, however, probable that Papua is approaching a period when there will be a temporary cessation in the expansion of cultivated areas. Once improvement conditions have been complied with, many lessees will be tempted or constrained to call a halt to development until the profit-winning stage is reached. Moreover, a given amount of labour, which can at first be devoted exclusively to bringing new land under cultivation, becomes increasingly absorbed in plantation routine as time goes on. But when the paying period arrives, it will certainly be accompanied by a further increase in the area under plantations. It was estimated in 1915 that £1,000,000 had been invested in Papuan plantations, practically the entire sum being subscribed locally or in Australia, except for the investments of two English companies.

(*c*) *Stock-Raising*

Pastoral lands may be had at low rents, with conditions as to the number of animals which must be on the leased area. At present there is practically no stock-raising, but there is no reason why Papua should not become, to some extent, a pastoral country, for suitable lands exist, and cattle thrive. There should be a future for the breeding of mules, since there is certain to be an extension of mule transport; and it has been suggested that the territory, which has a smooth water passage to Asia, might supply India with polo ponies and remounts. At present the chief animal of the country is the pig, which dominates Papuan existence. When wild, it is an intolerable nuisance to Papuan gardens and plantations. When domesticated, it plays a part in every circumstance of the native's life.

(*d*) *Methods of Cultivation*

Without entering into the technicalities of plantation management, it may be said generally that the problems which the planter has to solve are the clearing of the virgin forest and the subsequent elimination of weeds. In the first stage the usual procedure is to fell the timber, leave it to dry, and then fire it and let the fire run through, afterwards going over the ground, and clearing up and burning the remains. As soon as this is done, a catch crop is put in, to keep down weeds. The growth of weeds is terrific, and, if left in undisturbed possession, they become an impenetrable jungle thrice as difficult to clear as the original forest. It is often argued in Papua that maintenance work is not essential for coconuts after they are two years old; but, while it is true that on suitable soil palms will survive and bear crops even when left quite untended, there is no doubt that they are more productive when kept clear of weeds and scrub.

(*e*) *Forestry*

Hitherto sandalwood has been the most important timber export; but most of the trees in accessible regions have been felled, and in recent years the trade has shrunk to a tenth of its former dimensions. Little has yet been done to exploit the other forest resources of the country. The Government has power to proclaim timber reserves and to grant exclusive licences to work therein, the licensee paying a rent of £1 per 100 acres, with a royalty on timber felled, and being under liability to erect a saw-mill of power proportionate to the area. A company started operations in the Buna Bay district in 1914-1915, and in 1915-1916 there were seven subsisting leases on the Vanapa and Vailala Rivers and at Galley Reach.

The timber resources of the territory are less extensive than the agricultural, but they are considerable, a great part of Papua and the neighbouring islands being covered with forest. It is an objection to the best timber lands that they lie in comparatively high and inaccessible regions, but great and valuable forests are to be found in proximity to the rivers and coasts; and it has been estimated that there are 4,000,000,000 superficial feet of commercially valuable timber on the Vailala River alone. In the low-lying forests tropical trees abound; sandalwood and ebony being among the most important. On the higher ground the vegetation resembles that of the Temperate Zone, and at 11,000 to 12,500 ft. the cypress is particularly conspicuous. The species of timber found are, however, numerous, and 120 have already been catalogued. One hundred and fourteen are described as being useful; for girders, beams, railway wagons, and work involving heavy strains there are 16 varieties; for joinery, lining, and flooring, 15; for cabinet work and furniture-making, 15; for butter boxes, 14; for railway carriage and coach building, 10; for boat building, 5; and for piles, 4. Up till now the transport problem has hampered development to such an extent that Papua is an importer of timber. The difficulty is to get the timber to the rivers, and to ship it after it has been rafted down. Timber is more easily and cheaply carried when sawn, and the erection of saw-mills in the forest areas, with tramway connections, would provide a partial solution, if capital were available. As regards foreign markets, Australia is too rich in woods to be a customer for some time to come; but it is believed that profitable markets might be found in India, Manila, and China.

(*f*) *Land Tenure*

Of lands in Papua amounting in 1915 to 57,945,640 acres the natives held 56,479,109 acres; 1,208,374 acres were Crown lands; 235,072 acres were held on lease; and 23,085 acres were freehold. No European is allowed to purchase lands from the natives, as it has been a maxim of the Government that native ownership should be respected, and that no exploitation of native rights by immigrants should be permitted. When a white man desires to acquire land held by natives, he must approach the Government, which effects a purchase and subsequently leases it to him, if satisfied that the owners are willing vendors, and that the land is not necessary, or likely to become necessary, to the welfare of the local native community. This scrupulous regard for native rights has done much in the past to promote peaceful settlement; but the native is now growing sophisticated by contact with civilization; armed with his charter, and innately avaricious, he thinks himself master of the situation, and the horizon of land purchase is overcast.

As regards Crown lands, the broad principles of policy are that no estates should be conveyed in fee simple—existing freeholds being a legacy from earlier times—and that the rent of leaseholds should be assessed on the value of the unimproved land, subject to reassessment at intervals of 20 years. The rent is 5 per cent. on the unimproved value, which for agricultural lands is assessed at 5*s*. an acre, making a rent of 3*d*. an acre; and on a demise of less than 1,000 acres for a term of 30 years or upwards no rent is payable during the first ten years. The improvement conditions, with a penalty of forfeiture for non-compliance, are that one-fifth of the area suitable for cultivation should be planted within the first 5 years, two-fifths in 10 years, and three-quarters in 20 years.

(*g*) *Government Assistance to Agriculture*

The terms of Government leases may be regarded as generous, and within the limits of its slender resources the Government has tried in other ways to promote agricultural development. A Department of Agriculture was created in 1906. It has established at a cost of about £20,000 six nurseries and experimental stations where the suitability of plants to local conditions is tested, experiments in their cultivation are conducted, and seeds and plants are issued to planters. Samples of soil are also analysed at these stations, measures to prevent pests and diseases are studied, and meteorological observations are taken. A handbook, revised from time to time, is published. An economic and agricultural museum and library have been set up. A stud farm has also been started for the production of a good strain of animals.

(3) FISHERIES

The fishing industry is concerned with pearls, shell, and *bêche-de-mer*, or the sea slug, which, when used in gelatinous soups, is prized as a food luxury in the East. Beds and reefs show signs of exhaustion, and the fishery yield fluctuates, with a tendency to diminution (see Appendix, Table IV); but, as Queensland waters run up to the western coast, some of the produce of Papuan fisheries is credited to the Australian State. Competition has inflated the prices paid to native divers, and the profits of the licensed pearl-buyer are usually small. The *bêche-de-mer* fishery might be made a profitable industry for coastal natives, some of whom own vessels bought out of the wages of indentured labour; but the native will not take pains when not under supervision, and his ill-cured fish realizes a poor price.

(4) MINERALS

Numerous minerals are found in the territory, but except in the case of gold, copper, coal, and petroleum nothing has been done to ascertain the value of the fields, partly because of the ordinary miner's ignorance of minerals outside his own experience, and partly because of the difficulty, danger, and expense of prospecting. The mining laws of Queensland have been applied, *mutatis mutandis*, to Papua. The Government has appointed a geologist and has established a mineral laboratory and museum. Mining results show fluctuations (see Appendix, Table I); and by contrast with the early days of the British occupation, when it was the chief industry, mining has suffered a great decline in comparative importance.

Gold.—Gold has been more exploited than any other mineral. In 1916 the total yield of the gold-fields was estimated at 398,617 ounces, valued at £1,436,249. The Louisiade field, which is the oldest, and the Murua (Woodlark Island) field, which is the richest, are the most permanent in character. The other five producing fields are alluvial and largely worked out. They are the Gira field, in the valley of the river of that name and its tributary the Aikora; the Yodda field, extending from that river (a tributary of the Mambare) to the Kumusi River; the Milne Bay field, at the eastern end of the territory; the Keveri field, from Cloudy Bay to the headwaters of the River Musa; and the Lakekamu field, 90 miles up that river. The Sideia field, in the Eastern Division, was proclaimed on July 5, 1915, and in 1916 a field was discovered on the Imili River, twenty miles west of the Keveri Field, but neither of these new fields has been much worked. Gold used to be worked on Sudest Island, but the deposits are practically exhausted. Rossel Island is reported to have gold, but it has not been found in sufficient quantities to repay exploitation.

The methods of extracting ore from the permanent formations are much the same as in Australia. Alluvial gold is won in several ways, varying with the conditions which prevail. The most usual is "ground sluicing," or bringing from above a head of water down a river which has changed its course, and so sluicing away accumulations of surface soil, &c., until the shingle of the old bed is laid bare; the stones are then forked away, while the soil and gravel are thrown into the race, and borne by it over gold-saving appliances. When the present river bed has to be dealt with, "wing dam sluicing" is adopted: under this system a dam of logs, stones, and earth is built out into the stream, sometimes for half its breadth, thus enabling the alluvial soil to be sluiced off. The danger of this method is that a sudden flood may sweep the whole structure away. The third plan, known as "blind stabbing," is used where recourse cannot be had to the other methods. The miner, standing in the water, shovels the wash on to the bank for subsequent treatment. Dredging is also practised in the beds of the larger rivers. There were nine dredging claims subsisting in 1915.

No one who knows the country would be surprised if rich auriferous reefs were one day to be discovered. The geological formations occur which in Australia are associated with the precious metals; gold is found with a wide geographical distribution, and nearly all the rivers show "colours" of it. It is commonly believed that it exists in the central mountain ranges. It is, however, by no means certain that rich reefs, even if found, will be sufficiently accessible to be profitably worked.

Copper.—Copper occurs between the Main Range and Port Moresby. In this region lies the Astrolabe field, with an area of 30 square miles, where mines have been worked since 1906, and have furnished 5,398 tons of ore, valued at £85,731. The industry would be capable of profitable development if difficulties of transport could be overcome. Its future depends largely on the fate of the proposed railway (see p. 30). There is also copper in Woodlark and Sideia Islands.

Coal.—Coal has been found on the Fly, Purari, and Kikori rivers, but all of it (except that on the Purari, which has only 3 per cent. of ash) has been of the lignite variety, with a high percentage of contained moisture, resembling the brown coal of Sumatra. Owing to its inaccessibility, its character, and the condition of the seams, it could not at present be profitably worked. In view of the plentifulness of wood-fuel, Papua is not greatly dependent on coal; but it will probably come more into demand as development progresses, and the discovery of good coal might help to attract shipping.

Petroleum.—The recent discovery of petroleum on the Vailala River may deeply affect the future of

Papua. The field, which is undergoing experimental boring, is believed to be both rich and extensive; local indications compare favourably with those of the nearest commercial oil-fields in the Malay Archipelago; and the Commonwealth Government has thought well enough of the field to subject it to a State monopoly. As usual, however, in Papua the problem of accessibility presents itself. Owing to the bars across their mouths the nearest rivers give no access to any but light-draught vessels; and of the nearest harbours Hall Sound is cut off from the field by rugged country, and Era Bay is separated from it by a network of waterways in the Delta, which would make it difficult or impossible to run a pipe line to that part of the coast. It will therefore be necessary either to send the oil down the Delta waterways by light-draught, Diesel-engined barges, such as are in use on the Thames and in America, or to make use of Orokolo Bay, which is near the most promising oil-bearing districts. The objection to this bay is that south-easterly winds throw a surf into it; but tank steamers could use the bay in safety if the Mexican plan were adopted of letting them lie out to sea and feeding them there by a submerged pipe-line with a flexible coupling attached to its end. Owing, on the one hand, to the dangerous explosiveness of crude oil, and on the other to the cheapness of local wood-fuel and labour, the erection of a refinery near the place of shipment has been suggested.

Of minerals which have been neither worked nor prospected, galena and zincblende have been found in small quantities on Woodlark Island, and osmiridium on the Mambare and Gira rivers; cinnabar occurs on the Mambare river, at Merami, near Cloudy Bay, on the Brown River, north of Port Moresby, and on Normanby Island; a little sulphur is found on Normanby and Fergusson Islands; and there is graphite in many parts. Iron, manganese, and gypsum are also reported to exist in the territory.

(C) COMMERCE

(1) DOMESTIC

Trade within the territory is white, mixed, and native; that is, trade by Europeans for the supply of the white population; trade between whites and blacks, or the barter of axes, knives, beads, calico, tobacco, musical instruments, &c., against copra, rubber, *bêche-de-mer*, &c.; and native trade, carried on by the natives among themselves. The two first call for little remark beyond what is said below in connection with imports and exports. The third is of no great economic importance; but it is interesting to find an organized commercial system existing alongside of primitive barbarism and the civilization of the stone age. The Papuan manufactures pottery, canoes, fishing nets, mats, shell ornaments, stone implements, decorated gourds, and various kinds of " money " (see p. 58); and his canoes, weapons, and door-posts—often elaborately ornamented—the suspension bridges which he throws over rivers, and the canals and aqueducts of his garden irrigation system, bear striking witness to his ingenuity and patience. Fish is exchanged for agricultural produce, pottery for sago, native " money " for pots and parrots, mats and dresses for vegetables, and so forth. The adult population of the Laughlan Islands go on annual expeditions to the neighbouring islands in quest of the foodstuffs which they cannot grow themselves; and the departure of the fleet of "lakatois," or craft made of dug-out canoes lashed together and decked over, which carries Hanuabada earthenware to the west to exchange it for sago, is one of the events of the Papuan year.

(2) FOREIGN

The total volume of foreign trade (see Appendix, Table III) shows rapid expansion from £17,951 in 1888 to £121,277 in 1900 and £348,468 in 1916, and from £47,335 on the average of the years 1888-1898 to

£326,740 on the average of 1910-1914. As development is passing through the stage of expenditure without having reached that of productivity, the imports largely exceed the exports in value. Trade for 1914-1916 has been affected by the war, which has raised the price of imports and in some cases depressed the price of exports; while in general it has caused scarcity and dearness of freights and checked the flow of capital.

(*a*) *Exports*

Apart from minerals, exports fall into two classes. The first includes those which are due primarily to the bounty of nature unaided by man, such as sandalwood, native copra and rubber, *bêche-de-mer*, turtle shell, pearls, and pearl-shell; these are for the most part stationary or declining, only pearls and pearl-shell showing an increase (see Appendix, Table IV). The second consists of those derived from a partnership between nature and man, or plantation products, such as copra, rubber, hemp, cotton, &c., and these are increasing, in some cases with marked rapidity.

(*b*) *Imports*

The chief imports are foodstuffs (32 per cent.), drapery and clothing (12 per cent.), hardware and ironmongery (10 per cent.), tobacco and cigars (7 per cent.), building materials and machinery (each about 5 per cent.). The demand is governed by industrial progress, the amount and consequent consumption of indentured labour, and the volume of internal trade with the natives. The local industry in tobacco and cigars, if successful, will affect the imports of those articles; and it should be possible to reduce the heavy importation of foodstuffs by increasing local supplies. The Vailala oil-field will check the importation of oils and kerosene, which has shown a marked rise during recent years. For figures of the import trade see Appendix, Table IV.

(*c*) *Countries of Destination and Origin*

The official statistics of Papua do not indicate the ultimate destination of exports or the countries of origin of imports, and for various reasons it appears impossible to obtain the information from other sources. It is commonly said that Papuan trade is almost entirely with Australia. In fact, it seems that Australia receives about 67 per cent. of the exports and supplies about 62 per cent. of the imports, that the United Kingdom handles about 7 per cent. and 11 per cent. respectively, and that the remainder of the trade is accounted for, at least in part, by the fact that exports are frequently sent through Singapore, and, as regards imports, by purchases, principally of foodstuffs and tobacco from America, and of gunny bags, rice, and other goods from India, Siam, and elsewhere in Asia. Of the imports from Australia, rather less than one-half is produce of Australian origin. The country of origin of the rest and the ultimate destination of exports to Australia, so far as these are not consumed locally, cannot be ascertained; but since both classes are dealt with in Commonwealth markets, the entire trade may be regarded as Australian from the Papuan point of view.

(*d*) *Customs*

There are heavy import duties on tobacco, alcoholic liquors, and articles of luxury; duties of 1*d*. or 2*d*. a lb. on manufactured foodstuffs; of 10 per cent. *ad valorem* on certain specified articles, including boots, shoes, clothing, crockery and glass, cutlery, tinware, leather, and matches; and of 5 per cent. *ad valorem* on all other goods except those on the "free list." The "free list" comprises, amongst other things, agricultural and mining machinery and tools; vessels and boats; engines, waggons, and rails; seeds, plants, and manures; iron and steel, house-building materials, and furniture; corn, meat, fruit, &c.; coal and coke; and unmanufactured cotton. Port dues and wharfage rates are levied, but no export dues are payable.

(D) FINANCE

(a) *Public Finance*

On the average of the years 1906-1907 to 1915-1916 the annual revenue of the colony has been £68,477, and the annual expenditure £69,281. The revenue is made up in the main of grants from the Commonwealth of Australia and of customs receipts, the average of these two items being respectively £26,900 and £28,706; other items are postal receipts, £2,123; native labour fees, £1,359; mining receipts, £1,281; receipts from Crown lands, £787; and miscellaneous, £7,321. The average annual expenditure has been as follows: Government Secretary's Department (including the magistracy, the armed constabulary, and the gaols), £29,455; Department of Public Works, £10,399; Department of Lands, £8,649; Department of the Treasury (including customs and the post office), £7,549; the Medical Department, £4,786; the Civil List and the Lieutenant-Governor, £2,652; and miscellaneous, £5,791. The revenue has practically doubled in the period mentioned; standing at £41,813 in 1906-1907, it had risen to £86,335 in 1912-1913, and averaged £81,669 for the period 1911-1912 to 1915-1916. The expenditure has also increased, but not to the same extent, and the tendency which it exhibits to exceed the revenue has not been so marked in recent years as it was in the past. Besides its grant to the general cost of administration, the Commonwealth makes grants or advances loans for specific purposes, such as the development of Government plantations, wharf and road construction, and the erection of Government stations.

(b) *Currency*

The European currency is the same as in the United Kingdom, with the addition that Commonwealth notes are legal tender. Native "money" of various kinds is to be met with. By its makers it is bartered for other articles, just as pottery is exchanged for sago, mats for vegetables, &c. (see above, p. 54); and by those who do not make it, it is now valued chiefly as an ornament or a curiosity. In consequence, no doubt, of the requirement of the Native Labour Ordinances that he should be paid for his work in cash, the native is becoming fully alive to the value of coin, and now on the sale of his goods he frequently demands payment in cash instead of accepting the various articles known as "trade," which used invariably to be the medium of exchange in all dealings with natives.

(*c*) *Banking*

The Bank of New South Wales has branches at Port Moresby and Samarai. A branch of the Union Bank of Australia, which used to exist at Port Moresby, seems to have been given up.

(E) FUTURE POSSIBILITIES

Papua is a land of promise rather than of present value; and, while statistics afford little clue to future possibilities, it appears that the development of agriculture and the exploitation of minerals and forests should be attended with speedy and great success. Granted the existence of the resources and the sufficiency of the labour supply, it remains only to attract capital and to promote settlement; and for these purposes the inadequacy of communications must be remedied. "Papua," wrote a planter in 1911, "has many good things, latent and undeveloped. I want some, and am going to do all I know to get them. Papua says 'No,' and organizes her defences—mosquitoes, fever, thick forest, impenetrable swamp, indolent natives—and the game is simply one of attack and defence." But the individual planter can carry on only a guerrilla warfare with the aid of the mosquito net and the quinine bottle, the single axe, and the occasional drainpipe; even the limited company is confined to local operations; and what is wanted is a strategical plan such as the State alone can execute. More numerous roads; an occasional railway or tramway; the draining of swamps; a scheme for rendering the rivers navigable by light-draught but capacious craft, such as are in use on the Nile; a method of quick transit across the mainland; an extension and improvement of postal, telegraphic, and telephonic communication: these are all matters in which the initiative must rest with the State. The Government might also effect much in the improvement of ocean communications. Harbours have to be created or improved; a dangerous coast has to be thoroughly surveyed, and then to be beaconed, buoyed, and lighted; and shipping has to be attracted. The geographical situation of Papua is favourable to the creation of an efficient service, and the planter has too long suffered from dearness and scarcity of freights. If Papua is less fortunate than Dutch New Guinea with its safe coasts, good harbours, and proximity to the large centres of civilization in the East, its nearness to Australia makes it more fortunate than German New Guinea, which is remote from civilization, and, moreover, it lies directly on the trade routes between Australia and the commercial centres of China and Japan. Of the shipping entered and cleared at the ports of the Commonwealth in 1914-1915 a total of over 2,000,000 tons, or nearly a quarter of the whole, was engaged in trade with Asiatic countries and Pacific Islands. In these circumstances it should not be impossible to devise a plan for attracting shipping to Papua.

If it be objected that the line of Government policy here sketched will involve a great expenditure of money, it may be replied that the outlay will prove ultimately to be not unremunerative. Millions have been spent in opening up Australia, and the need of Papua is greater. Great sums have been devoted to the development of Java, a country which closely resembles Papua, and the expenditure has been justified by the result. Sir William Macgregor saw in Papua another Ceylon; and there can be no reasonable doubt that it is as rich an uncut jewel as any that is set in the Imperial Crown.

APPENDIX

TREATY I.—ARRANGEMENT BETWEEN GREAT BRITAIN AND GERMANY RELATIVE TO THEIR RESPECTIVE SPHERES OF ACTION IN PORTIONS OF NEW GUINEA

(A. & P. 1885, c. 4441.)

(1) Letter from Earl Granville to Count Münster:—

Foreign Office, April 25, 1885.

Proposes boundary between British and German Protectorate as follows:—

"Starting from the coast near Mitre Rock on the 8th parallel of south latitude, it would follow that parallel until it is intersected by the meridian of 147° east longitude: would proceed thence in a straight line in a north-westerly direction to the point of intersection of the 6th parallel of south latitude, with the 144th meridian of east longitude, and would continue thence in a west-north-westerly direction until it meets the point of intersection of the 5th parallel of south latitude with the 141st meridian of east longitude."

(2) Letter from Count Münster to Earl Granville:—

German Embassy, London, April 29, 1885.

Accepts proposed boundary.

TREATY II.—CONVENTION BETWEEN GREAT BRITAIN AND THE NETHERLANDS DEFINING THE BOUNDARIES BETWEEN THE BRITISH AND NETHERLANDS POSSESSIONS IN THE ISLAND OF NEW GUINEA

Signed at The Hague, May 16, 1895.

(A. & P. 1895, c. 7834.)

Art. I.—The boundary between the British and Netherlands possessions in New Guinea starts from the southern coast of the said island at the middle of the mouth of the Bensbach River, situated at about 141° 1′ 47·9″ of east longitude (meridian of Greenwich).

Art. II.—The boundary proceeds to the north, following the meridian which passes through the said mouth, up to the point where that meridian meets the Fly River.

Art. III.—From that point the waterway (" thalweg ") of the Fly River forms the boundary up to the 141st degree of east longitude.

Art. IV.—The 141st degree of east longitude after this forms the boundary up to the point of intersection of the boundaries of the British, Netherlands, and German possessions.

Art. V.—Navigation on the Fly River is free for the subjects of both Contracting Powers, excepting as regards the carriage of warlike stores, and no duty shall be imposed on other goods conveyed by that river.

TABLE I.[1]—GENERAL COMPARATIVE STATISTICS

—	1906-07.	1909-10.	1911-12.	1913-14.	1915-16.
	No.	No.	No.	No.	No.
White population ..	690	879	1,064	1,186	992
	£	£	£	£	£
Value of imports ..	87,776	120,177	235,369	212,134	223,040
Value of exports ..	63,756	100,599	99,990	123,140	125,428
Total volume of trade	151,532	220,776	335,359	335,274	348,468
Customs and excise ..	15,924	24,901	37,751	37,341	33,931
Estimated gold yield	58,886	60,181	60,628	50,110	43,248
Ocean-going ships, entered and cleared	No.	No.	No.	No.	No.
	233	276	355	929	214
	Tons.	Tons.	Tons.	Tons.	Tons.
	159,177	256,286	275,803	358,506	247,887
	Acres.	Acres.	Acres.	Acres.	Acres.
Area under lease ..	48,002	363,425	332,422	230,879	226,783
Area under cultivation	1,467	10,053	24,707	42,921	47,506
		No.	No.	No.	
Number of labourers..	..	7,532	10,000	11,383	..

TABLE II.[2]—AGRICULTURAL DISTRIBUTION, 1916

(*Quantities in Acres*)

—	Coconuts.	Rubber.	Hemp.	Cotton.	Tobacco.	Other Cultures.	Total.
Central division ..	9,046	5,614	4,746	8	200	517	20,131
Eastern division ..	17,406	1,748	66	..	..	168	19,388
South-eastern division	4,393	2	..	..	..	14	4,409
Western division ..	851	92	.	5	..	34	982
Gulf division ..	926	..	..	..	..	45	971
North-eastern division	690	210	..	..	..	2	902
Kumusi division ..	357	5	..	..	..	6	368
Delta division ..	347	..	..	..	..	8	355
Totals ..	34,016	7,671	4,812	13	200	794	47,506

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[1] Authority: Annual Reports.

[2] Authority: Annual Report, 1915-16.

TABLE III.[1]—IMPORTS, EXPORTS, AND TOTAL VOLUME OF TRADE

——	1900–01.	1901–02.	1902–03.	1903–04.	1904–05.
	£	£	£	£	£
Imports ..	71,618	70,817	62,367	77,631	67,188
Exports ..	49,659	68,300	62,881	75,506	76,435
Total ..	121,277	139,117	125,248	153,137	143,623

——	1905–06.	1906–07.	1907–08.	1908–09.	1909–10.
	£	£	£	£	£
Imports ..	79,761	87,776	94,061	94,680	120,177
Exports ..	80,290	63,756	80,616	79,692	105,599
Total ..	160,051	151,532	174,677	174,372	225,776

——	1910–11.	1911–12.	1912–13.	1913–14.	1914–15.
	£	£	£	£	£
Imports ..	202,910	235,369	218,323	212,134	202,055
Exports ..	117,410	99,990	128,016	123,140	94,354
Total ..	320,320	335,359	346,339	335,274	296,409

——	1915–16.	Average Annual Value.			Mean.
		1900–01 to 1904–05.	1905–06 to 1909–10.	1910–11 to 1914–15.	
	£	£	£	£	£
Imports ..	223,040	69,924	95,291	214,158	126,458
Exports ..	125,428	66,556	81,991	112,582	87,043
Total ..	348,468	136,480	177,282	326,740	213,501

[1] Authority: Annual Reports.

TABLE IV[1].—PRINCIPAL ARTICLES OF EXPORT AND IMPORT.

Exports.					
—	Annual Average.			Mean.	Percentage.
	1900-1 to 1904-5.	1905-6 to 1909-10.	1910-11 to 1914-15.		
	£	£	£	£	
Gold	45,663	53,088	55,695	51,482	59·15
Copra	4,109	13,434	18,575	12,039	13·94
Copper	—	1,871	13,281	5,051	5·80
Pearls	851	2,661	7,448	3,653	4·20
Sandalwood	6,412	4,026	394	3,611	4·15
Pearl and trocas shell ..	2,579	703	5,514	2,932	3·37
Bêche-de-mer	3,057	1,303	2,023	2,128	2·44
Rubber[2]	676	806	1,309	930	1·07
Natural History specimens	1,022	1,131	315	823	·95
Turtle shell	773	810	445	676	·78
Hemp[3]	—	8	1,800	603	·69
Timber	61	153	939	384	·44
Coffee	212	613	290	372	·40
Cotton	4	11	1,006	340	·39
Other articles	1,137	1,373	3,548	2,019	2·23
Total exports ..	66,556	81,991	112,582	87,043	100·00

Imports.					
—	Annual Average.			Mean.	Percentage.
	1900-1 to 1904-5.	1905-6 to 1909-10.	1910-11 to 1914-15.		
	£	£	£	£	
Foodstuffs	24,865	31,265	66,314	40,814	32·27
Drapery and clothing ..	7,583	10,567	27,209	15,119	11·95
Hardware and ironmongery	6,637	10,755	22,502	13,299	10·51
Tobacco and cigars ..	5,816	8,436	13,412	9,221	7·29
Building material ..	3,801	3,999	13,079	6,960	5·50
Machinery	2,755	2,462	11,998	5,738	4·53
Wines, spirits, and beers	4,052	3,060	6,808	4,640	3·66
Oil and kerosene ..	1,296	1,971	5,642	2,970	2·34
Boats and launches ..	1,174	2,057	4,034	2,422	1·91
Drugs and chemicals ..	871	1,429	3,198	1,832	1·45
Livestock..	—	426	4,532	1,653	1·30
Coal	600	1,343	2,070	1,338	1·13
Fire-arms and ammunition	615	963	1,362	980	·77
Other articles .. .	9,859	16,558	31,998	19,472	15·39
Total imports	69,924	95,291	214,158	126,458	100·00

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[1] This table is compiled from the Annual Reports and Government Gazette.

[2] The export of rubber in 1915–16 amounted to £14,846.

[3] The export of hemp in 1915–16 amounted to £11,999.

TABLE V.[1]—TOTAL ESTIMATED OUTPUT FROM EACH GOLD FIELD, 1915.

Name of Gold-field.	Division.	Date Proclaimed.	Gold Yield.	Value.	Percentage of Total.
			Ounces.	£	
Murua .	South-Eastern	6.11.95	178,507	619.055	46·00
Yodda ..	Kumusi ..	31. 7.00	72,683	271,544	18·80
Gira .	Mambare ..	5.11.98	65,638	247,357	17·00
Lakekamu	Central ..	13.12.09	29,500	110,675	7·60
Louisiade ..	South-Eastern	28. 5.89	23,359	80,271	6·00
Milne Bay	Eastern ..	6.12.99	14,230	49,987	3·70
Keveri ..	East Central ..	6. 8.04	3,770	14,112	·90
Totals ..	.. ..	..	387,687	1,393,001	100·00

TABLE VI.[2] INDENTURED NATIVE LABOUR

——	1909–10.	1912–13.	1915–16.
Engaged—			
Agricultural and pastoral	2,407	3,674	2,721
Mining	1,588	832	819
Timber-getters ..	38	—	—
Seamen and boatmen ..	331	415	266
Carriers	—	11	—
Storeboys	73	146	157
Household servants ..	280	453	496
Pearl shell and *bêche-de-mer* fishers	512	189	296
General labourers ..	299	1,205	1,889
Other occupations ..	57	50	42
Totals	5,585	6,975	6,686
Approximate number employed not under contract of service	1,947	2,945	Not stated
General Total ..	7,532	9,920	—
Paid off—			
Total	3,801	6,909	5,880

[1] Authority: Annual Report, 1914-15.

[2] Authority: Annual Reports.

AUTHORITIES

Historical

British New Guinea. Annual Reports, 1889, &c.

Chalmers, J. *Pioneering in New Guinea.* London [no date].

Chignell, A. K. *An Outpost in Papua.* London, 1911.

Cooke, C. Kinloch. *Australian Defences and New Guinea.* London, 1887. (Contains an account of Sir Peter Scratchley's Commissionership in New Guinea.)

Haddon, A. C. *Headhunters.* London, 1901.

Kolf, D. H. *Reise door den weinig bekenden Zuidelijken Molukschen Archipelago en langs de geheel onbekende Z.-W. Kust van Nieuw Guinea in 1825 en 1826, met eene Kaart.* Amsterdam, 1828.

MacGregor, Sir William. *British New Guinea: Country and People.* London, 1897.

Modera, J. *Verhaal van eene reize naar de Z.-W. Kust van Nieuw Guinea.* Haarlem, 1830.

Moresby, J. *Discoveries and Surveys in New Guinea.* London, 1876.

Murray, J. H. P. *Papua, or British New Guinea.* London, 1912.

Parliamentary Papers, New Guinea Accounts and Papers, c. 1566, 1876; c. 4441, 1885; c. 4273, 1885; c. 4584, 1885; c. 4656, 1886; c. 5883, 1890; c. 6323, 1891; c. 7834, 1895; c. 8935, 1898. London.

Rivers, W. H. R. *The Government of Subject Peoples* in *Science and the Nation*, edited by A. C. Seward. Cambridge, 1917.

Seligmann, C. G. *The Melanesians of British New Guinea.* Cambridge, 1910.

Smith, Hon. Staniforth. *Handbook of the Territory of Papua.* 3rd edn., Melbourne, 1912.

The Year-Book of the Commonwealth of Australia; section *Papua.*

Economic

Official and Semi-Official

Colonial Office:

British New Guinea, Annual Reports, 1887 *to* 1899/1900.
Colonial Office List, 1917.

Commonwealth of Australia:

British New Guinea (Papua), Annual Reports, 1900/1901 *to* 1915/1916.

Report of Mr. Atlee Hunt, 1905.

Papua, Report of the Royal Commission, 1907.

Report on Petroleum in Papua, by Arthur Wade, 1914.

Post and Telegraph Guide, 1915.

Official Year-Book, 1916.

Trade and Customs and Excise Revenue (Bureau of Census and Statistics).

Report of the Inter-State Commission of Australia on British and Australian Trade in the South Pacific, 1918.

Territory of Papua:

Government Gazette.

Handbook, by Staniforth Smith, Director of Agriculture; 3rd edition. Melbourne, 1912.

Bulletin No. 1, 1913. *Notes on the Occurrence of Coal, Petroleum, and Copper in Papua, by J. E. Carne, Assistant Government Geologist, New South Wales. Sydney*, 1913.

Timber Trees of the Territory of Papua: Reports and Catalogue by Gilbert Burnett, District Forest Inspector, State of Queensland. Melbourne, 1908.

Customs and Excise, Statistical Department. *Trade of the United Kingdom with Foreign Countries and British Possessions.*

Admiralty, Hydrographic Office. *Sailing Directions: Pacific Islands, vol. I, with supplements*, 1908-1917. *Australia Directory, vols. II and III, with supplements*, 1905-1913.

GENERAL

Australasia (British Empire Series). London, 1900.

Australian Joint-Stock Companies' Year-Book, 1913/1914.

Historical Geography of the British Colonies, vol. VI, *Australasia*, by J. D. Rogers. Oxford, 1907.

Shipping World Year-Book; edited by E. R. Jones. London, 1917.

Stanford's Compendium of Geography and Travel: Australasia. London, 1908.

MACGREGOR, Sir WILLIAM. *British New Guinea: Country and People.* London, 1897.

MACKAY, Colonel KENNETH. *Across Papua . . . . with the Royal Commission.* London, 1909.

MURRAY, J. H. P. *Papua, or British New Guinea.* London, 1912.

PRITCHARD, W. C. *Papua.* London, 1911.

STRONG, W. M. *Notes on the North-Eastern Division of Papua (British New Guinea).* Geographical Journal, London, 1916.

OTHER WORKS

Light is thrown incidentally upon economic conditions by the works of scientific men, explorers, missionaries, &c. These are numerous. Among those consulted the following may be cited:—

GRIMSHAW, B. *The New New Guinea.* London, 1910.
HADDON, A. C. *The Decorative Art of British New Guinea.* Dublin (Royal Irish Academy), 1894.
McFARLANE, S. *British New Guinea and its People* (Transactions of the Ninth International Congress of Orientalists, vol. II). London, 1893.
PRATT, A. E. *Two Years among New Guinea Cannibals.* London, 1906.
SEMON, R. *Im Australischen Busch und an den Küsten des Korallenmeeres.* Leipzig, 1896. English edition, London, 1899.
WALLACE, A. R. *Studies Scientific and Social,* vol. I, ch. XX, New Guinea and its Inhabitants. London, 1900.

MAPS

The map of British and German New Guinea (I.D.W.O. No. 1822) published by the War Office is on the scale of 1 : 2,000,000, and was issued in 1906.

Four route maps of parts of British New Guinea have been published by the Royal Geographical Society since 1906, viz.:—

"Part of British New Guinea," on the scale of 1:750,000, shows the routes of W. R. Strong, C. H. W. Monckton, and Captain F. R. Barton in the southern portion of the territory in 1908.

"Central Papua," on a scale of 1:500,000, shows routes of Dr. Mackay and W. S. Little in the Purari River district in 1908-9.

"Western Papua," a sketch map on a scale of 1:400,000, shows the routes of W. N. Beaver in the Girara district in 1910-13, and was published in 1914.

"The North-Eastern Division of Papua," shows the routes of W. M. Strong in 1908-12, and was published in 1916.

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